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THE rubber companies are constantly increasing the extent of their advertising, says *Shoe and Leather Facts*, which evidently has been keeping an eye upon the well-filled columns of THE INDIA RUBBER WORLD. Moreover, our contemporary observes, they are doing it much more intelligently, giving it more attention and study than they used to. Consequently they are getting better results from it. Some of them are already looking beyond the distribution, and not only are they advertising in the trade papers, but extending their lines somewhat into the general newspapers and appealing directly to the consumer.

Jealousy in the Rubber Trade.

IN conversation with the editor of THE INDIA RUBBER WORLD the other day, a man who is perhaps entitled to a rank at the very fore-front of the manufacturers of mackintoshes and rubber clothing in America said: "I have never before in all my experience seen the rubber manufacturers so blind to the opportunity and necessity of advancing prices. Here we are to-day manufacturing mackintoshes and gossamers at a cost of raw material which has advanced at least 50 per cent., but it is almost impossible to bring any one of the principal concerns in the trade to an appreciation of the necessity, much less the advisability, of advancing prices to a figure that will cover this advanced cost. I can only attribute it to jealousy—the fear that one man will perhaps sell a bill of goods that another could secure, when it must be evident to any business man that there is neither profit nor stability in doing business at figures that do not really make money. There is no other industry in the United States in which the manufacturers would have stood back so long as we have done, and I think it ought to be the mission of THE INDIA RUBBER WORLD to impress upon the trade the importance and desirability, from both a personal and a business standpoint, of dropping these little jealousies that stand so much in the way of sound business policy and substantial progress."

The World's Rubber Reservoir.

WITH all due respect to Mr. Stanley, who at present is in London, so that we have no fear in criticising him, how does he know exactly how extensive the Amazon forests are? It is unquestionably true that there are millions of acres of rubber trees among the Amazon regions that have never yet been tapped. The shortness of the rubber crop coming from the Amazon is never due to a scarcity of trees or a lack of rubber. It is simply due to the laziness, the incapacity or the scarcity of laborers. While the rubber forests of the Congo are no doubt immense, the world must still look to the Americas for its best rubber, and the day is probably not far distant when Mexico and Central America will have rubber forests covering them, under cultivation, that will be more productive, more profitable than will be the whole of the Congo region. The whole secret of successful rubber gathering is accessibility. White men in the Congo region are not a success. Black men in that same region are not hard workers, and probably never will be. On the other hand, were these forests in Central America, along the line of railroads, help could be obtained easily, and with proper care the laborers could be kept tolerably healthy. This has been proved by the many who have been engaged in various works down there, only those who went into excesses being smitten by the fever and dying of the tropical diseases. We think, therefore, that the attention of capitalists had better be directed nearer home than to the Dark Continent with its manifold dangers and the faint chances that there is, at the present time of successful commercial ventures, in the line of rubber gathering.

The Rise in Rubber Goods.

IN response to a circular letter sent out generally to manufacturers of mechanical rubber goods in the United States a meeting of representatives of that industry was held in one of the parlors of the Astor House, New York, on May 27th. The circular referred to bore the signatures of the New York Rubber Company, the Gutta Percha and Rubber Manufacturing Company, the New York Belting and Packing Company, the Boston Belting Company, and the Revere Rubber Company. Among the firms represented, in addition to those named, were the Star Rubber Company, Trenton, N. J.; the Cleveland Rubber Company, Cleveland, O.; Akron Rubber Works, Akron, O.; Trenton Rubber Works, Trenton, N. J.; New Jersey Car Spring and Rubber Company, Jersey City; Boston Woven Hose Company, Boston, and the National India Rubber Company, Bristol, R. I.

The meeting was called to order by Mr. A. Spadone, President of the Gutta Percha and Rubber Manufacturing Company, who referred, in his opening remarks, to the recent heavy advance in the cost of crude rubber and the advisability of combination on the part of manufacturers to protect their own interests by making a corresponding advance in the prices of their products.

The result of the deliberations which followed is sufficiently set forth in the appended circular, which has been issued to the trade, with a few signatures attached in addition to those of the companies represented at the meeting:

At a meeting of the manufacturers of mechanical rubber goods of the United States, held at the Astor House, May 27th, it was unanimously resolved to advance prices not less than 10 per cent. on all regular goods, to take effect June 2, 1890, and the undersigned companies pledged themselves to sustain this advance:

New York Belting & Packing Co.....by J. H. Cheever, Treas.
Boston Belting Company .....by Jas. Bennett Forsyth, Gen. Man.
The Gutta Percha and Rubber Mfg. Co.....by A. Spadone, Prest.
New York Rubber Co..... .....by Wm. H. Acken, Prest.
Revere Rubber Co..... .....by Hy. C. Morse, Treas.
Boston Woven Hose Co.....by J. Edwin Davis, Treas.
Brook, Oliphant & Co... ... .
Trenton Rubber Co..... by F. A. Magowan, Prest.
New Jersey Car Spring & Rubber Co... ....by J. J. Fields, Prest.
Hamilton Rubber Co .....by F. W. Whitehead, Acting Director.
Home Rubber Co.... ....by J. O. Stokes, Treas.
The B. F. Goodrich Co... .....by Geo. T. Perkins, Prest.
The Whitehead Bros. Rubber Co....by James R. Whitehead, Prest.
Star Rubber Co.....by Thos. A. Bell, Gen. Mgr.
Erie Rubber Co.....by Nat. J. Whitehead, Treas.
The Hartford Rubber Works Co.....by John W. Gray, Prest.
National India Rubber Co.....by Sam'l P. Colt, Prest.
Mercer Rubber Co.....by W. H. Sayen, Prest.
Cleveland Rubber Co.... ....by J. K. McClymonds, Prest.
Chicago Rubber Co ....by J. K. McClymonds, Prest.

It was agreed that the circular should be construed as referring to regular lines of belting, packing, hose, tubing, pure gums, gaskets, matting, soling, etc. The prices of goods other than the above, consisting of specialties, patented or otherwise, are to be advanced by each manufacturer as he may elect.

A committee was also appointed to formulate a plan for a permanent organization, and the meeting adjourned subject to the call of Chairman Spadone.

"There is nothing strange in this rise," said Treasurer Henry C. Morse, of the Revere Rubber Company. "It is due to the shortness of the present crop and to the difficulty of securing enough of the raw material to supply the demand of the manufacturers. Prices are very firm in foreign markets and some fine grades have advanced almost 100 per cent. The prices for the balance of the year must run high. We are not alarmists, and the market will find its natural level in good time. Early in the eighties prices went up considerably above the present quotations without the natural causes that now exist in favor of a rise. The upward tendency is due entirely to the shortness of the stock of raw material, which manufacturers have to depend upon."

While the ten per cent. advance in the price of manufactured goods does not offset the advance in rubber, manufacturers state that it is all that the trade will bear at present. As for the current reports that this advance is the beginning of a "rubber trust," a prominent manufacturer says:

"The combination that we have been reported as about to enter into is nothing more or less than a simple social association, with nothing at all in it approaching a combination. Our purpose is to meet from time to time in a social way, as the members of many other trades meet, and at such times we shall doubtless talk over the conditions of trade and may even make suggestions which the members are free to follow or not. In the case of the advance in our prices it does not mean that we have a uniform or combination price which is advanced ten per cent but that each concern agrees to advance, its prices ten per cent. so that there will remain the same relative difference in our prices as before. The fact is, the recent advances in the price of rubber would warrant a much greater advance in our prices. Such a condition of things would seem of itself to show that a combination is not in the wind, when we are not able to agree upon a greater advance than ten per cent.

"Further, I do not believe a combination is practicable in our business. The rubber shoe people have been trying for two years or more to bring about such an arrangement between themselves and have signally failed. The conditions are even more strongly anti-combination with us than with the rubber shoe makers. There are some sixteen concerns in the United States manufacturing mechanical rubber goods. Of these there are very few in the West. There are three in Boston, while the greater number are clustered at Trenton, N. J. Now in Boston they have a reputation for making a high class and high-cost grade of goods, while the Trenton producers make a specialty of cheaper goods. Thus we run on distinct and well-defined lines, and to bring the industry into such a combination as we have been reported to propose would be simply out of the question. But in a social organization such as is proposed —and under this term we do not cloak what is in effect to be a combination—we believe we can do much to promote the welfare of the industry in general. Other trades have tried such social associations with great profit, and we simply propose to follow in their line.

"The rainy season that we have thus far had has pretty much deprived us of any trade in garden hose, which is the staple of trade with us at this season of the year, and trade is, in consequence, a little dull. It was very much the same way last summer, and people who have hose have told me that all last season they did not have it out but a very few times. Aside from the garden hose trade this is likely to be a somewhat quiet season of the year with us, but all in all, the mechanical rubber goods industry is, doubtless, in a strong and healthy condition."

THE demand from new subscribers for back numbers of the INDIA RUBBER WORLD having exhausted our reserves for that purpose, the publishers will be glad to pay 20 cents each for copies of the following numbers, viz.: December, 1889, and February, 1890.

The Business of Rubber Gathering in the Amazon Valley, and its Development by American Capitalists.

[*Written for* THE INDIA RUBBER WORLD.]

BY COURTENAY DEKALB.

TO many Americans the system of trading for rubber in Brazil doubtless will be new and interesting. Observe primarily that the word used to express the nature of this business is *trading*, and it must be understood, not in its generic sense, but in its original signification of barter. When we speak of the "Pará broker" we do credit to his intentions, and to the office which he fills in relation to the manufacturer in the North, but his actual operations consist in an exchange of merchandise for the rubber consigned to him by his "up-river correspondents." He must learn by experience, which is often more costly in South America than in New York, what goods his correspondents wish. He must keep on hand a full assortment of tools and hardware, dress goods, groceries and delicatessen, tooth brushes and brass buttons; in fact, he must be a wholesale outfitter of the traditional country store, bearing in mind that the patronage he seeks to please is whimsical to an almost childish degree. His "correspondents" are in the same line of business on a smaller scale, and are large debtors of the broker in Pará. In order to obtain such a constituency the broker is obliged to advance goods on the strength of the forthcoming crop. After the harvest is ended the "correspondent" is certain to be in arrears, in spite of which he will draw still more freely upon his creditor. Thus is perpetuated that pernicious practice which draws after it so many evils, and assists to force upon the people inflated values with the inevitable counterpart of universal insolvency. Knowing beforehand that he can never hope to collect the face value of his credits it becomes necessary for the broker to calculate the probable average of delinquencies, and to advance the prices of his goods to cover these losses.

The "up-river correspondent" is also usually a middleman, and his experiences duplicate those of his creditor in Pará. These men are located in the larger towns along the Amazon and its navigable tributaries, the most important of them being established in Manáos and Iquitos. Dependent upon these is the larger class of merchants—who keep little stores in the numerous petty towns throughout the Amazon Valley, and the so-called "fazenders," who should by their title be planters, but who in reality are only managers of establishments where the rubber is collected. This establishment consists of the plantation house, frequently a large adobe structure with a red tiled roof. Around this, through a clearing of a few acres, will be scattered the palm-thatched houses of the Indians and negroes, who live practically enfeoffed and serve him under a discipline which the Northern eye can with difficulty distinguish from actual slavery.

Around the plantation, or "fazenda" (equivalent to the Spanish "hacienda," or to the colloquial "chácra" in Peru), will often be a retinue of whites and half-breeds, who seem to have no special duties to perform, and yet partake of the fazender's bounty, and exist in a state of friendly familiarity with him, which to the outsider is quite inexplicable. It is, however, upon the courage and determination and physical fortitude of these men that the world depends for its supply of rubber. They correspond in a measure to the hardy voyageurs of the halcyon days of the Hudson's Bay Company. During the dry season, which is contemporaneous with the Northern summer, they sleep and smoke away the hours in happy idleness, picking up any bits of gossip borne by passing steamers, and discussing them at endless length with the fazender, who by virtue of his authority as the local capitalist acts as final referee in the argument. It is a jovial life they lead now, and they grow unduly hilarious at times, actuated by the potency of over-draughts upon the cachaça bottle. But with the commencement of the rains, when the sap flows more freely—for vegetable life even in the tropics has its alternations of energy and comparative repose—these scenes of festivity cease. The fazenda is awakened by a stir of active preparation, in which great canoes, often thirty feet in length, are fitted up and provisioned for crews of from ten to twenty men, who set out under the captaincy of the whilom merry makers to gather the harvest of rubber. These canoe parties make voyages in some instances of thirty and forty miles before establishing a permanent camp, which of course is made in a region known to abound with seringa, or rubber trees. Here begin in earnest the hardships of the expedition. The Indians are lazy, and knowing that their few wants will in any case be provided for, they need constant supervision by the leader of the band. There are dangers of many sorts to be encountered—danger from insects, from reptiles, from beasts of prey; but more dreaded than all these is the subtle enemy of malarial poison, which sooner or later is almost certain to mark the rubber gatherer for a victim. Sezoes they call it in Brazil, terciana in Peru equivalent to the calentura of the northern provinces of South America, and to the "rice fever" of the Southern United States. Far less perilous were it to meet the fiercest tiger in the forests of Brazil than to be exposed to the rains in such a climate, with the system already impregnated with the fever germs. A strong constitution may resist it even for years, but at last some unwonted exposure precipitates the malady in the form of bilious fever, and the patient dies. Whoever enters the forests in search of rubber is braving the chances of death, which will ultimately cut him off. Escape from the moisture is impossible. It rains every day, even in the dry season.

The forests are always wet until noon, and showers descend upon you as you push your way through the heavy undergrowth. The men return to camp at night, weary and chilled from their saturated garments. The Indian wisely dispenses with all but a breech cloth or a pair of cotton trousers rolled up above the knees. The white, however, prefers to maintain greater dignity, and suffer the consequences. These might be less serious if he had better food to sustain his physical powers, but in order to avoid encumbrances the refectory contains only the hard unpalatable "farinha," and the dried salt fish called "pirarucú," coarser than the haddock, and possessing no delicacy of flavor to tempt the appetite. Sometimes a little tea is added to the stores, and the Indians occasionally kill a bird, but such luxuries are unusual.

The operations in the woods consist, first, in tapping the trees and collecting the exuding milk. The incision is no deeper than the bark, and the receiving cups, of about a half pint capacity, are fastened just below the wound. The milk is taken at once to the camp where it is smoked over a fire of palm nuts. There are three varieties of nuts known to the Indians which will thicken the rubber milk. The best is from the palm "Iuajá," which unfortunately is comparatively scarce. Next in value is the nut of the "Urucury," which is the one most commonly employed. Most abundant, but least efficacious, is the "Uauassú," a variety used only when neither of the others can be found in the vicinity. The fire is built on the open ground, or within a little crib of green sticks, and the milk is poured upon a round stick or paddle blade, and passed through the pungent smoke. This operation requires great care, else the rubber instead of becoming a homogeneous gum will be

coagulated in part, which reduces the product to the middle grade, called "entra fina," occasioning a loss that might, with more skill, have been avoided. The reputation which certain rivers possess for sending good rubber depends almost entirely upon the ability of those who do the smoking.

A party of rubber gatherers will often shift camp a number of times until a full canoe load has been obtained, and then with light hearts turn towards home, which is the scene of a wild debauch on the first night after their arrival. A few weeks after the harvest has commenced the merchants begin sending their steam launches to collect the rubber from the small store-keepers and fazenders who have obtained goods upon the prospective crop. If the merchant should wait for the rubber to be sent to him he would never get it. Even with all this vigilance he is often cheated by the owners of what might be termed piratical launches who wander hither and thither and buy rubber wherever they can *for cash*, paying of course much less than the market price, the fazender reserving for his creditor sufficient, as he thinks, to pacify him, and to hold open the chance to overdraw once more with the promise of increasing the yield in the coming year by employing a larger force of men. In Iquitos, Manáos and Pará, the three most important depots in the Valley of the Amazon, the balls, or "pelles," of rubber are packed in boxes of from forty to sixty cubic feet capacity, to be shipped to the United States and Europe. The lumber for these boxes forms a large part of the outward cargo of vessels from the United States, not because abundant timber does not exist in Brazil, but because the natives are not enterprising enough to cut and saw it with sufficient attention to economy in method to enable them to deliver as cheaply as it can be procured from abroad.

The two chief varieties of rubber obtained from the Amazon and its tributaries are the "borracha," the product of the Seringa tree, and the "caucho" of Peru. The Seringa is gregarious in habit, but the Caucho is scattered solitarily through the forests. The result of this is that the Peruvian "cauchero"—gatherer of "caucho"—instead of being content with what he could secure by tapping, drains the milk from the entire tree by cutting it down, lopping off the branches, and allowing the sap to collect in holes scooped out in the ground beneath. In addition to the needless contamination by dirt and leaves which ensues upon this, the product is further injured by the use of soap to thicken it, the "caucho" requiring the admixture of some alkaline substance, instead of smoking, to fit it for the market. Caustic potash serves best, but its cost forbids its use. The ashes of certain vines, however, which grow abundantly in Peru, are excessively rich in alkali, and by a little energy a lye could be obtained whose use would vastly improve the quality of the rubber produced. By the present system the Caucho trees are being rapidly exterminated, and merchants in Iquitos are already predicting that the time is near at hand when the industry will cease. This is foresight, without wisdom to perceive how such a calamity might be averted. The Caucho is a tree of rapid growth, and a few provident planters have found it profitable to cultivate orchards of them. This could be developed into an enormous industry if fostered by a company which would offer encouragement to immigrants. The "caucho" from these groves being gathered by tapping the trees would also be clean and of correspondingly greater value.

It has been suggested that perhaps an association of American rubber buyers could advantageously establish an agency at Pará, or Manáos, and purchase directly from the producers. To do this it would be necessary first of all to buy out several of the larger firms, together with all their long lists of "bad debts," in order to gain a constituency of shippers. Some idea of the amount of capital necessary for such an enterprise may be acquired from considering that the gross out-put of rubber from the Valley of the Amazon for the year 1889 was 36,300,000 pounds, worth about $16,000,000 in Pará. Of this quantity one firm alone exported 8,350,000 pounds, or 23 per cent. of the total, which means an investment of perhaps three and a half millions of dollars. Although many of the existing customs may be detrimental as well to the people at large as to the broker, it would be quixotic to fancy that they could be swept away at once, and better methods substituted by any company, however large and powerful it might be. Those who now owe will continue to owe to the end of their lives, and to obtain part payment of their debts the creditor must continue to trust them. A company, however, by offering to buy for cash at the current market price from parties not known on its books, and by selling goods for cash at a liberal discount from the prices charged for them when advanced on the forthcoming crop, would undoubtedly stimulate the foundation of new establishments for rubber gathering under the young men of the country and under immigrants whom the influence of such a company would, by a little effort, induce to settle in the Valley of the Amazon. A company of this character could also probably encourage the production of a larger percentage of the best grade of rubber, the "borracha fina," free from granular coagulations, by insisting upon the cultivation of the palm Iuajá in order that the smoking should be done with the best nuts, and improved appliances for smoking, designed to secure greater uniformity, might likewise be introduced. When a new constituency operating on a cash basis had thus been created, and the supply accordingly increased—for the present supply of Amazonian rubber is limited only by the number of men engaged in gathering it—the price would naturally become greatly reduced, and the over-drafts of the old debtors would not be so seriously felt. In substantiation of this is the circumstance of a firm in Manáos freeing one of its customers from an obligation of $40,000 in order to secure his removal from a desirable locality so that this firm could send one of its trusted fazenders there to work the territory.

The conduct of business in Brazil will be found as treacherous as walking on quicksands unless one has acquired experience, and a venture of this kind would be very likely to fail unless it worked its way slowly, absorbing various rubber interests by degrees until it had sufficient control to effect a regeneration of the present system—a result which would be fraught with immense benefit to the producer and to the consumer of this precious gum.

One of the most important matters in connection with the Amazonian rubber trade, as it is also one of the important problems in South America, is the linking of Manáos with the outer world by telegraph. The question has frequently been agitated, but the citizens of Pará have skillfully kept the project from maturing. Manáos is at the head of navigation on the Amazon for regular ocean-going ships. It is the natural centre for the trade of eight great Brazilian rivers, as well as for the immense region of eastern Peru, while Pará is the natural entrepot for the business of the three large streams which flow down on the eastward of the Rio Madeira. These eight rivers drain the best rubber districts, saving the "island" region, in South America. It has often been said by the brokers in Pará that if Manáos had the telegraph she would of necessity become the hub of the rubber trade. Indeed, so great are the advantages of her situation, that in spite of the fact that transactions here are based upon market reports which are five days old when they arrive by the steamers, 18 per cent. of all the rubber exports from the Amazon are from this port. If prevented from laying a cable up the Amazon—a distance of 1000 miles—

then the wires must cross the 750 miles of forest and mountain that intervene between Manáos and Georgetown, or preferably Paramaribo, on the northern shore of the continent. As an American enterprise the advantage Paramaribo would offer is that the Dutch government would undoubtedly favor it, and Dutch capital could be obtained upon far more favorable terms than could be done from the English. If Georgetown were chosen as the northern terminus English influence must of necessity be felt to a large extent in any scheme of this kind. The Dutch government, furthermore, would welcome such a peaceful invasion of Guiana by Americans, because it would more firmly bind the sympathies of her colonists to the mother country because of her fostering an enterprise which would so materially develop the resources of this region.

The extension of such a line would be less difficult than its subsequent maintenance, since a guard would be needful to protect it, but one which would be efficacious and at the same time profitable would be a railway. The Indians assert that extensive plains stretch through the interior from a short distance back of Manáos up to the mountains which separate Brazil from the Guianas. It is a region regarding which the world has no accurate knowledge. Even the mountains are practically unexplored, but we know that out of them flow rivers depositing beds of gold sands in the lowlands of the three Guianas. If there exist veins to form the basis of a mining industry, and plains suited for cattle raising, a railroad would soon find business aside from that which it would gain by carrying the telegraph to Manáos, and by offering a rapid route for freight between the North and the South. A large portion of the beef consumed in Manáos is already brought from the Rio Branco, just south of the dividing range of mountains, and the plains at this point may be continuous with those seen stretching northwestwardly from the Amazon above Montalegre. The whole interior of this unexplored region would seem to be high, judging from the courses of the rivers flowing out of it. Another hopeful circumstance is that the Province of Amazonas, of which Manáos is the capitol, subsidizes two steamship lines to encourage them to visit her port, and where such a public spirit prevails a company proposing so important a work could reasonably expect very material governmental aid. Too much stress can hardly be laid upon the advisability of making explorations to determine the feasibility of building such a line. If not done by America it is almost certain to be done by England. It was once mooted by English capitalists, but was abandoned because of opposition by the old imperial government. This no longer stands in the way, and the plan will be revived abroad if Americans do not make the enterprise their own by securing concessions, and by investigating the route.

The climate of Brazil, it must be admitted, enjoys an unsavory reputation, but the greater part of the difficulty is chargeable to the utter neglect of the commonest sanitary precautions on the part of the natives, and to a most incomprehensible recklessness on the part of foreigners. A few simple rules, rigorously adhered to, will reduce the danger so that a strong healthy man need not hesitate to venture into the country. It is also well for the foreigner to remember that the climate will certainly not protect him from the consequences of exposure which would kill him in the North.

THE longest rubber belts in existence, it is said, are the "twins" in use at the elevators of the Pennsylvania Railroad Company in Jersey City, which were manufactured by the New York Belting and Packing Co. Rolled up each of these belts stands about nine feet high, is 2600 feet long and weighs about 12,000 pounds.

The Converse Memorial Bust.

THE presentation to the trustees of the Converse Memorial Building, at Malden, Mass., of the magnificent bronze bust of the Hon. E. S. Converse, on the evening of May 26th, was an impressive event, and one of great interest to the people of that town, for whose benefit he has used his wealth so liberally. The public library and the building in which it is placed having been the gift of Mr. Converse to his fellow citizens, they showed their appreciation by giving an order to Samuel Kitson, the sculptor, to perpetuate his features in bronze. The exercises occurred in the library, which was filled by the citizens of Malden. The officers of the Malden High Schol battalion acted as ushers and the music was rendered by the Converse Lodge quartette. The opening address was by Mayor Wiggin, who introduced Dr. John Langdon Sullivan, who had prepared a poem for the occasion. While he recited it the bust was undraped by Miss Ruth H. Wiggin. The Mayor then introduced City Solicitor Arthur H. Wellman, who made the presentation address. In conclusion the speaker said :

"We praise him for his loving deeds. He helped the poor to an education, comforted the sick and troubled, and was always kind and considerate to his employees. He would not break his word and on one occasion he paid out $25,000 in unearned wages because his factories could not start up when he said they should."

Mr. Deloraine P. Corey, president of the board of trustees of the library, accepted the gift, paying an eloquent tribute to Mr. Converse. The latter gentleman was not present, being at the time in Europe.

In consideration of the great benefit of his enterprise to the industries of Malden, as well as of his wonderfully generous public bequests, it is in order to give a brief resumé of the life of Mr. Converse. He was born July 28, 1820, at Needham, Mass., and at the age of four years removed with his parents to Woodstock, Conn. It was in April, 1833, that he first arrived in Boston, and, living with his brother, J. W. Converse, attended school for a short time. He subsequently went to live with his sister, Mrs. Maria Converse Butler, in South Boston, being employed by her husband as clerk in a general dry goods and boot and shoe store, attending school at the same time. It will be seen that young Mr. Converse had no particular predilection for an eight-hour day for himself when he was working up, however he may stand upon the question for his thousands of employees to-day.

He remained with Mr. Butler until 1836, when the latter went to Troy, N. Y., and Mr. Converse went to his home in Woodstock, where he combined the two pursuits of working on a farm and attending school until he was seventeen years old. He then, although not feeling his education finished, felt that he should get into business for himself, and so went to Thompson, Conn., and engaged with a Mr. Whipple for two years in the clothiers' trade. So energetic was Mr. Converse, and so quickly did he master the details of this business, that before two years were out he became a full partner, and by the time he

was twenty-two years old, had bought out the whole business and was running it prosperously for himself. In September, 1844, having accumulated some capital, he removed to Boston and entered the wholesale shoe and leather business with Benjamin Poland, under the firm name of Poland & Converse, whose place of business old residents will remember to have been at No. 38 Market Street. In 1849, Mr. Converse, still working upward, dissolved the firm of Poland & Converse and immediately formed a copartnership with John Robson, under the firm name of Converse & Robson, continuing in the same business at the well-known Red Mills at Stoneham, having an office at No. 34 North Market Street, Boston. In 1850, he removed his place of residence to Linden Court, Malden, and assisted in the organization of the Malden Bank, he being elected one of the directors. The following year he was elected president, and has been re-elected annually up to the present time.

BUST OF HON. E. S. CONVERSE.

In 1853 he dissolved partnership with Mr. Robson and was elected Treasurer of the Boston Rubber Shoe Company, which was then but an ordinarily prosperous concern. Since then he has devoted most of his time to the building up of the business of this corporation, with a measure of success that is very rarely accorded any one man. Mr. Converse, at the present time, is the actual head of the concern, and takes the most intense and vital interest in anything that pertains to its business management. At the same time, the growth of such an enormous business has entailed somewhat a division of responsibility. He is therefore assisted by his nephew, C. C. Converse, who is the assistant treasurer, and by his son, Mr. Harry E. Converse, who is associated with him in the general management of the affairs of the company.

Mere figures do not express the wonderful capacity of the two factories of the Boston Rubber Shoe Co., for turning out goods, but when it is said that day after day, without the least delay or friction, from 40,000 to 41,000 pairs of rubber boots and shoes are made up and shipped, it shows something of the administrative qualities of the genial founder of this business.

—Mr. Frank E. Hall, who is well known to the rubber trade throughout the country, has handsome offices at No. 67 Chauncy Street, Boston. He has assumed the United States agency for a snap button, and it is no pun at all to say that he really has got a "snap." The manufacturers of rubber clothing of all kinds, of leather jackets, and oil clothing as well, are greatly interested in this fastening, which has proved itself much cheaper than buttons and button-holes, and very much more satisfactory.

—The Davol Rubber Co., of Providence, R. I., have a fine exhibit of druggists' sundries and surgical goods at the Convention of Physicians now being held in Boston.

—An enterprising firm in Boston by the name of Winkley Dresser & Co., who are encamped at No. 2 Milk Street, taking advantage of the general interest in the high price of rubber, have filled their window with rubber bands, set a couple of potted rubber plants in sight, borrowed a ham of Para and set up an audacious placard saying: "We anticipated the rise in rubber, laid in a stock and are selling," etc.

—At the recent annual meeting of the stockholders of the Goodyear Metallic Rubber Shoe Company in Naugatuck the following directors were elected: George A. Lewis, Dr. Edward Lewis, B. B. Tuttle, Henry F. English and H. H. Peck. Mr. Peck was elected to the vacancy caused by the death of ex-Governor J. E. English, of New Haven. The board of directors subsequently made choice of George A. Lewis as president and treasurer, and William T. Rodenbach as secretary. Mr. Lewis was formerly secretary and treasurer, with Mr. English, president, Mr. Rodenbach had previously been head clerk.

Gum Drops.

A DESPERATE SITUATION.

Golosh—I see the India rubber trust is going to raise prices.

Artick (excitedly)—For Heaven's sake don't breathe a word to our landlady about it! I *can* stand Para beefsteak, and she can't afford hides. There's only one more step and, say, old man, you wouldn't have us lunch off junk iron, would you?

RUBBER CRUSTS.

A keeper of a railroad restaurant in the West had the word *Good* appetizingly displayed on his custard pies. A customer wrote *year* on the under crust, remarking that the great inventor ought to get due credit for all he had done.

Every-Day Work in the Factory.

BY NICK R. AUGUR.

THE writer of this series of articles was very much pleased to receive a letter from a young man in a rubber mill not long since, in which he said, referring to some previous statement of ours:

"You say that any one posted in India rubber should be able to throw his compound book one side, and from his knowledge of the use of adulterants write out and form anew all the necessary compounds to successfully conduct the business. Will you be kind enough to tell me what the ordinary adulterants are that are used in rubber, and what their office is?"

My boy, you have written to just exactly the right person, because we are willing, with our whole heart, to tell all that we know about the rubber business that is best for you to know, and to tell you of lots and lots of things that we don't know.

In the first place, the most common adulterant in use is whiting. The office of whiting is to make a high-priced gum cheaper. Properly used, as good a wearing compound can be made of rubber and whiting as could be made from rubber alone, for many purposes. The use of sulphur you probably know all about, as that is not really an adulterant, its office being to cure the rubber. Lamp black is used to make goods black. Litharge assists in the cure, it being used in mould work to make a quicker cure, or in dry heat goods, such as boots and shoes and clothing, because they cannot cure the goods without it. Barytes is used where some customer beats a rubber man down to the lowest possible price per pound on some goods that there is no money in anyhow, the baryta being put in merely as a make-weight. Oxide of zinc is used in white goods to make them white. Golden sulphuret of antimony is used to give a golden yellow color to goods, and properly used is one of the best vulcanizing agents that has ever been produced. Hyposulphite of lead, commonly called "hypo," is used as a vulcanizing agent, and also to make black goods that will not bloom. Oxide of iron is used to color rubber where a cheap red is wanted. Vermilion is used as a coloring matter in dental gum, and in some soft rubber work, where a brilliant shade is desired. Infusorial Flour is used in mould work that is to be subjected to an especially severe usage from steam or acids, and makes a particularly fine finish in light-weight clothing. Resin is used, a few ounces to a batch, to give a stick in frictions an work of that class. Lime is used, a very little at a time, to prevent goods from blistering. Powdered alum is used to make goods blister. Tar is used in rubber work to carry the compound and to help in spreading it thinner on cloth surfaces.

And finally, common sense is used in large quantities with all of these compounds, or else the results are exceedingly disastrous. If you will allow me to give you a little bit of advice right on the end of this information that I have been giving you, I should like to do so. In the first place, the chances are in the factory that you are working in, if you show yourself progressive and willing to learn, and anxious to make yourself useful, you won't have a bit of trouble in having questions answered that are proper to ask. You say you work in the grinding room, and sometimes on the calender. If you intend to put yourself in a place where you can be valuable to yourself, and to your employer, learn every single thing that you can about that calender work. Don't let any kind of spreading escape your eye. Know the weights at which all the different goods are to be spread. Train yourself to be the keenest judge of conditions, so if a sheet of stock is being run a little bit heavier than usual, you will know it, and know it so thoroughly that you can't fool yourself about it. Make yourself a judge of the stock that comes off the mill. Know when it is well mixed; above all know that it is not burned. Learn how the different stocks should be mixed. In fact, don't let a single day pass but what you learn something.

Another thing. My thought at first was to write this to you simply as a personal letter, but there isn't anything in here that I am not perfectly willing your employer should read, and I believe that he will most fully subscribe to it. Bless your heart, my boy, he doesn't want to keep you ignorant. The better work you can do in the grinding room, the better work you can do on the calender, the better grasp of business you have throughout the whole factory, the easier you make it for him, and the more money he can make. So do as I tell you—learn all you can, see all you can, and modestly, firmly, perseveringly make yourself a necessity in that factory.

In the rubber business there has always been, and always will be, hosts of unsolved problems. Questions are continually coming up that may be settled two or three different ways, each of which will be right, and only the most acute judgment can determine which of the number will be the most valuable.

A gentleman in the rubber business comes to us with a problem which is quite interesting, and which he asks us to put in our columns. If it does not draw forth valuable comment, it may at least set other superintendents thinking. The question that confronts him is this:

He is making a certain kind of rubber cloth, and in one compound that is furnished him he has 2½ pounds of Para rubber and 36 pounds of shoddy. Now calling the Para rubber, $1.08, 2½ pounds would cost $2.70. The grade of shoddy used in this compound was the 11 cent, which would make the 36 pounds cost $3.96. The total then for gum in this compound would be $6.66.

Now, another man equally skilled gives him a compound that costs exactly the same, and yet that is made up very differently. This compound No. 2, which is used for exactly the same purpose, is 3½ pounds of Para and 36 pounds of shoddy. The Para at $1.08, would cost $3.78; while the shoddy, in this case being an 8 cent grade, would reach $2.88, making the total sum cost $6.66, which was what it did in the other.

Now comes the question of the manufacturer, which of those two compounds is the most valuable for a heavy cloth, providing of course in each the same amount of adulterant is put, and the same care observed in vulcanization? Speaking with several rubber experts on this, opin-

ions have been divided, and we therefore publish this and allow other gentlemen posted in these matters to decide upon the question as they see fit, and we would gladly receive any expressions of opinion that they may formulate.

How American Bulbs are Made.

ONE of our staff wrote the following article long ago for the lamented *Rubber Era*. He was then a bulb maker, and although a graduate from factory work, he still keeps up his interest in rubber matters. He has brought this article up to the present time and we gladly give it as a sequel to the European bulb article in the March issue of the INDIA RUBBER WORLD:

It is commonly supposed by the uninitiated that the "bead," or raised line, that encircles a bulb shows the joining of the pieces of which it is made. The fact, however, is that the pieces or original parts of the bulb are invariably joined right angles to the bead line. Long bulbs, such as syringes and atomizers, are made of two pieces; round bulbs, as pumps and balls are made of three pieces. New and unique styles that call for variation from the established modes are daily encountered. A competent pattern maker, however, will find little difficulty, as a general thing, in so joining the parts as to secure the best results, both in vulcanizing where the even swelling of the article must be considered, and in wear and tear, where the seams must run so as to be protected as much as possible by the general contour of the bulb.

After the pattern maker has decided by measurement and experiment upon the shape and size of the parts which go to form the bulb, zinc or galvanized iron patterns are made and given into the hands of the cutters. Mixed sheets of the required thickness being spread and afterwards cut into convenient sides or squares, the bulb making begins. Each piece cut must have distinctly skived edges. Considerable care is necessary in this, as the strength of the seam depends upon the smooth fitting of the edges The three parts for hollow balls may, however, be cut with a die. The pieces when cut are arranged in large books with leaves of smooth cloth. If the bulb has a neck, small pegs of iron are first prepared by being cemented and wound with strips of rubber as a nucleus for the neck. The two or three parts of the bulb are then brushed with cement the whole length of the skived edge, after which they are thoroughly heated.

When thoroughly warmed and softened, the bulb maker, taking a prepared peg, places the neck of one piece on one side of the rubber core, and another neck piece on the opposite side, then presses them firmly together, and rolling the whole tube-shaped piece between thumb and forefinger, has finished the neck of the bulb. The next process is that of knitting, the edges which form the seam. Holding the finished neck towards him in his left hand, with the thumb and forefinger of the right, he pinches the edges firmly together for nearly the whole distance round. The shape is now not unlike that of a "long clam." Into the side aperture, which is left open, is poured a little water or liquid ammonia. The opening is then made still smaller, and as a final touch, the maker puts his lips to the orifice, and puffing out his cheeks till they look like miniature balloons, blows full and hard into the inside of the bulb. The softened rubber under this sudden pressure expands, the flattened shape is lost in a fuller and more rounded outline, while the operator, with a quick nip of the teeth, closes the opening, the imprisoned air and water holding the sides apart in symmetrical corpulency. There are those who can never learn the knack of blowing up a bulb with the mouth, but are obliged to use a bulb to inject the air.

After the makers have done with the now partly-made bulb, it is passed to the trimmers who, armed with scissors with curved blades, carefully circle the seams, cutting away all unevenness, till the whole exterior is smooth and ready for the mould. In front of the trimmers are a number of shallow pans partly filled with chalk. Into these the bulbs are laid. A small dumb waiter takes them down to the mould room and returns the empty pans. The bulbs on leaving the chalk pans are deposited in a small cylindrical box which, turning a few times, powders them so effectually that the rubber cannot adhere to the inside of the mould. An experienced mould worker now taking one-half of a mould in his left hand, with his right gently forces the bulb into it, capping it with the second half. If the pattern maker has done his part faithfully each will just fit its mould. If not, they will come out of the vulcanizer wrinkled, showing that it was too large; or, if glazed and imperfect, that it was too small.

A flat iron ring or clamp holds the two sections of the mould together when in the vulcanizer. This is tightened by iron wedges which are driven between the mould ends and the clamp. The moulds after being keyed are piled on cars that run upon small tracks into the vulcanizers, and are cured by steam heat. When the curing process is completed the vulcanisers are opened, and the cars, by a short extension of the track, are run under a simple shower bath which quickly cools them. They are then unkeyed, the moulds twisted open and the bulbs taken out. If the work be well done the swelling of the liquid within its rubber prison has exerted so intense a force that every line and letter within the mould is reproduced upon the outside of the bulb, while the sulphur combining with the heat has sealed the copies with its magic spell.

The iron peg in the neck is next loosened by means of a blunt awl, and slipped out, leaving the bulb perfect in shape. In the mould room are large car-like boxes into which the bulbs are thrown. A box being full it is trundled away to the cylinder room, where it undergoes a thorough scouring and polishing in huge slowly revolving cylinders,

When taken out of the cylinders the dirty yellow color which the bulb bore on leaving the mould has wholly disappeared. It now looks smooth, white, and finished. The neck being cut off the required length by a small adjustable cutter—devised expressly for the purpose—the bulb is ready for market, or for the various fittings which accompany it as adjuncts to the syringe, atomizer, or other bulb. Where a smooth clear-cut hole is needed in any part of the bulb, except the neck, it is cut by a swiftly revolving punch. The neck hole is left by the iron peg as already described.

A good illustration of the power of the imprisoned steam within the bulb may be obtained by knocking a clamp off a mould before it has been treated to the shower bath. The two hemispheres of iron will fly apart as if by magic, the bulb swells to treble its normal size, and explodes with a loud report. The mould workers are sometimes badly burned by hot water which bursting bulbs scatter in all directions.

A well-made bulb, one that has a good energetic spring, that has just the right smoothness of outline, that is not scarred by imperfections in the mould, and that has the whiteness of a healthy cure, is an object that always wins the respectful admiration of rubber men. Toys, balls, and hollow goods generally, are all made in the same manner as bulbs.

How the French Make Celluloid.

THE manner in which celluloid is made in France is thus described: A huge roll of paper is unwound slowly, and while unwinding is saturated with a mixture of five parts of sulphuric and two parts of nitric acid, which is carefully sprayed upon the paper. The effect of this bath is to change the cellu-

lose in the paper into pyroxyline. The next process is the expelling of the excess of acid in the paper by pressure and its washing with plenty of water. It is then reduced to a pulp and bleached, after which it is strained, and then mixed with from twenty to forty per cent. of its weight in water. Then follows another mixing and grinding, after which the pulp is spread in thin sheets, which are put under enormous hydraulic pressure and squeezed until it is as dry as tinder. These sheets are then put between heated rollers and come out in quite elastic strips which are worked up into the various forms in which celluloid is made.

Before Rubber Foot-Balls Came In.

FOOTBALL must have been a very old game in England, as it is spoken of prior to 1175. It was, however, never regarded with especial favor by the law, and in the reign of Edward III. an act was passed forbidding it. During the reign of Richard II. a similar law was passed, and the Scotch kings, James I. and II., were so utterly down upon the sport that all over the kingdom it was "decreed and ordained that the foot-ball and golfe be utterly cried down and not to be used." King after king passed statutes against it, and still the English people loved the sport and clung to it. James I. of England writes: "From this Court I debarre all rough and violent exercise, as the football, meeter for the lameing than making able the users thereof," and in the reign of Elizabeth, his predecessor, a true bill was found against sixteen persons for playing the unlawful game. In Cromwell's time a youth was indicted for playing the game, and this is how the indictment read:

"KENT—Before the Justices of the Peace it was represented that at Maidstone, county aforesaid, John Bistrod of Maidstone, &c., apothecary, with force of arms, did wilfully and in a violent manner run to and fro, and kick up and down in the common highway and street within the said county and town called the High street, a certain ball of leather, commonly called a foot-ball, unto the great annoyance and incumberance of said highway, and to the great disquiet and disturbance of the good people of this commonwealth passing on and travelling in and upon the same, and in contempt of the laws, &c., and to the evil example of others, and against the public peace."

The chances are that the prejudice that these kings and law-makers of the olden time had against football was because they were so clumsily made and were really such dangerous things. Had it been in our day when the foot-ball is made of rubber and is a light and beautiful work of art, there is no doubt but that English kings would have come in with the English public and joined either in the game of Rugby or the ordinary "kick as kick can."

Pleased With the Paper at First Sight.

NOW and then one of the many rubber men who, being induced to subscribe for THE INDIA RUBBER WORLD by the receipt of a sample copy, takes occasion to write a pleasant letter expressing his appreciation of it. This is a pleasant class of letters to receive, and we make room for a specimen, as follows:

POINT PLEASANT, W. VA., May 26, 1890.

EDITOR INDIA RUBBER WORLD:—A sample copy of THE INDIA RUBBER WORLD is at hand. Inclosed please find check for subscription thereto. Your journal contains much information of value to manufacturers, salesmen and consumers of rubber products, and is well gotten up. I wish you success.

E. A. BURNSIDE.

Current Gleanings.

BY LIGHTNING ARRESTER.

IT is reported that a large submarine cable factory is to be established at Calais, France. A London electrical journal says that this is the first attempt of the sort made abroad, English manufacturers having practically had a monopoly of the industry. There has long been, however, a submarine cable factory in Italy, that of Pirelli & Co., who have establishments at Milan and Spezia, and have done a good deal of cable-laying for the Italian Government and some for that of Spain. On the banks of the Thames there are four cable factories which have turned out almost every mile of the 120,000 odd that are submerged in all parts of the globe. In the Hawaiian Islands is to be found the only example of American submarine cable enterprise; two of the islands are connected by some forty miles of cable manufactured last year by the Bishop Gutta Percha Company of New York City. The cable is of a light type, with no iron armor, the outer protection consisting only of jute; but it was successfully laid down and is giving great satisfaction.

* * *

The scheme for an underground railway through the central part of London has aroused opposition on the part of property owners who object to being undermined, and a parliamentary committee has been inquiring into the subject. The other day the question of working came up (electricity being the method proposed), and Sir Benjamin Baker, the engineer to the line, was asked some technical questions. "Now, Sir Benjamin," said an opposer of the scheme, "what about the conductors for your currents; are we to presume that they will both be uncovered?" To this the hero of the Forth Bridge, his accent showing sorrow for such evident simplicity in matters electrical, replied: "My dear sir, did you *ever* see two naked conductors running alongside the cars?"

* * *

More particulars are to hand of the artificial gutta percha to which I referred last month. The material has been named "Purcellite" by the inventor. Five different kinds have been made, of which three are soft and elastic, like cured rubber, and two are hard like wood or bone, but, unlike those substances, elastic. The specific gravity is from 1.5 to 2.75. The insulation resistance is given as higher than that of gutta percha, almost equal to glass, and the cost, even when purchasing the raw materials by the pound and working them up in the laboratory, is said not to have exceeded four cents per pound, therefore on a large scale it should be easily made for two cents per pound. It all sounds too good to be true (my skepticism so far has prevented me from applying for the agency), but an eminent English electrician, Mr. Latimer Clark, has expressed his approval of the general appearance of the samples of "Purcellite" which have been submitted to him, saying that they are quite unlike any of the "rubber substitutes" that have hitherto been brought to his notice. As yet no electrical tests of the new material have been published, but full tests by responsible experts are promised as soon as possible.

* * *

The Standard Underground Cable Company of Pittsburg, Pa., have secured the contract for laying a large batch of underground wires for the New York Fire Department. The specifications call for the furnishing and laying of 30,000 feet of two-inch pipe and 650,000 feet of No. 14 conductor "Standard" lead-covered underground cable. All the cables are to be braided and painted with "P. & B." paint. The Standard

Company's bid for the entire job (work on which will be begun immediately) was $47,771.59.

* * *

The Western Electric Company exhibited at the Paris Exposition some splices of multiple-wire Patterson cables which were pronounced by some of the French experts to be the finest they had seen. One was of 51 pairs, and others of 125 and 100 wires. The individual splices were distributed spirally over a short length of the cable and afterwards covered with a short piece of lead pipe only slightly larger than the other. They exhibited also some good, but somewhat complicated, splices for electric light cables.

* * *

The insurance companies have lately had a good deal to say about the risk of fire in buildings lighted by electricity. Where fires occur they generally are due to either bad workmanship or the use of inferior material in wiring. In spite, however, of the occasional fires which can be traced to electric light wires, electricity is still the best risk that the underwriters have to deal with, notwithstanding the hyperbolical statements of a gentleman who told a meeting of underwriters recently held in New York that "electricity was a most prolific source of danger, and its introduction has cost the insurance companies more than any method of lighting heretofore in use." The figures on which this remarkable statement was based were obtained by putting down the total loss caused by the big Boston fire as caused by electricity, although it has never been proved that electricity had anything to do with starting it. From the report circulated by the insurance companies, it appears that a single fire due to the upsetting of a glue-pot did more damage than all that were attributed to electricity.

* * *

Capt. Willard L. Candee, of the Okonite Company, has invented recently an improved method of protecting underground cables containing wires insulated with fibrous materials from the inroads of moisture. It is well known that such materials absorb moisture from the air with great rapidity, and that if the ends of the cable are exposed for any time the insulation is likely to suffer considerably. Captain Candee's plan for preventing any such accident is to fill a short space of the pipe at each end of a section of cable with moisture-proof material such as okonite, gutta percha, etc. Thus the pipe is filled up with a sort of water-tight plug, in which the wires are firmly imbedded, and the ingress of any moisture to the inner part of the lead pipe, where the wires may be insulated only with cotton or paper, is rendered impossible.

* * *

The Norwich Insulated Wire Company, of Cedar Street, New York, is developing quite an extensive business. Hitherto the principal output has been in 100 wire telephone cables, of which quite a number have been placed in the subways of New York and Brooklyn, but now the company is turning attention to electric light cables. The special feature of the manufacture is paper insulation saturated with resinous compound, the whole being protected by a lead pipe.

* * *

The demand for high-class insulated wire continues to increase steadily. Mr. J. W. Godfrey, of the New York Insulated Wire Company, recently returned home after an extended business trip. He established numerous agencies in the Central, Western, and Southwestern States, and booked several large orders. One order, amounting to over $50,000, included 350,000 feet of line wire and five miles of Grimshaw white core wire. The Okonite Company are running their new factory to its utmost capacity, and still cannot keep pace with their customers' demands. The American Electrical Works of Providence are busy with "Faraday" cable, quite a quantity of which is now in the New York subways. The branch of the American Electrical Works recently established at Montreal is already doing a very big business. Great quantities of simplex wire are going West, where underground work flourishes, and the Eastern Electric Cable Company, who manufacture the Clark wire, find the demand for their goods as active as ever and the supply barely able to keep up with it. The Edison Machine Works are just introducing a solid core rubber covered wire; hitherto they have made only braided lapped and taped wires, but more confidence seems to be felt in a wire the covering of which presents no evidence of seam or joint and has a perfectly smooth surface. As every concern bearing the magic name of Edison is always equal to the occasion, such a wire will henceforth be produced at the big establishment of Schenectady, and doubtless in large quantities.

* * *

The "P. & B." Conduit and Construction Company have brought out a new system of conduits for underground wires. The main feature of the system is the use of wood impregnated with "P. & B." compound and specially prepared, securing lightness, strength and durability. The company claim that the material used can in no way injure the insulation of cables or their external coverings, and is a non-conductor of heat, so that the cables will not suffer from the proximity of steam heating pipes. The system of construction, both as regards main conduits and lateral connections, is also considered to be an improvement on present methods, a great advantage claimed being that cables can always be pulled out without any difficulty. This has been attempted but seldom with the subways as now constructed, but in some instances it has been a matter of considerable difficulty.

* * *

THE INDIA RUBBER WORLD has received a pamphlet of some fifty odd pages containing a description and illustrations of the Van Rysselberghe system of simultaneous telephony and telegraphy. An interesting account is given of the line worked on this system between Montevideo and Buenos Ayres. A feature of the line in question is that it contains the longest submarine cable through which telephony has been commercially carried on up to the present date. The crossing at the mouth of the River Plate necessitated the laying of a cable twenty-seven miles long, and two cables of this length were put down, the line being metallic circuit throughout. The total length of the line is 181 miles, and when it is considered that 27 are of submarine cable, the bad effect of which on telephonic transmission is well known, it will be seen that the commercial application of simultaneous telegraphy and telephony has accomplished no small feat. The pamphlet containing this information is published by the Compagnie de Telégraphie et de Téléphonie Internationales, of Brussels.

A Few Words About Recovering Rubber.

IT is only within a few years past that devulcanization has been reduced to a science. When rubber shoes were first collected and ground to a fine powder, they were of little more value to the manufacturer than so much whiting would have been. When, however, it became possible to drive the sulphur out by means of heat, and to sheet this rubber into what was practically unvulcanized stock, its value at once became apparent. It was more than an adulterant—it was rubber, poorer in grade than crude rubber, but at the same time capable of many

uses in boots and shoes, clothing and mould work. Indeed, had it not been for this, it is a question if the growth of the rubber business would not have been seriously retarded. In the line of recovering old shoes and clothing compounds, the manufacturers of these goods have done wonderful work, but have they not lost sight of a business that is exactly in their line, and that would be of considerable advantage to the rubber trade?

There are in the various druggists' sundries and mould work factories in this country hundreds of tons of white rubber scrap that can be used only by being ground to powder as an adulterant. No one in this country makes a business of devulcanizing it—in fact, there are those who say it cannot be done. There are also hundreds of tons of car-spring and heavy mechanical goods that, while they are ground up and used, are never devulcanized and sheeted. It is hardly worth while, perhaps, to mention the large amounts of pure gum that are treated in the same way.

This may not seem a big business to a shoddy manufacturer who has been accustomed to selling three or four carloads a month to a single customer, but were any one of them to see that the white rubber scrap in this country was collected, and to have some process for devulcanizing it, so that it could be sheeted and given back to the manufacturers at a reasonable price, it would be of great advantage to those who manufacture druggist's sundries, would find a ready sale, and would bring a substantial profit to the manufacturer and consumer.

Make the Rubber Store Attractive.

BY MOSE M. BEAK.

JUST now, when all eyes are turned toward the prevailing high figures on crude gum, and manufacturers are on the *qui vive* for something new to put upon the market; while chemists are burning midnight oil looking for the long sought for process for making white hard stock, the retailer is asking, why do not people go to the rubber store for their rubber goods? Why can we not make it more of a business of itself? The innumerable articles made from rubber to-day, with no end to new ones coming up, certainly make these questions pertinent. In my travels among the stores I see much that must be changed before this result is attained.

To begin, is there any reason why a retail rubber store should not wear the same neat appearance that a first-class drug store, a cloak store or dry goods establishment shows? In many of the stores the first things met with inside the door are mens' heavy rubber boots or hose or something just as attractive. In some cases the "tubing rack," is one of the first things encountered. A lady on entering such a store, if it be a stormy day, and trade is brisk, faces a half-dozen men trying on rubber boots. In wending her way among them to get where the ladies' goods are kept, perhaps she brushes against the tubing, or her skirts sweep along the loops of hose, the result of which we all know is not pleasant, neither is it pleasant for men to be disturbed by customers passing out and in. The ladies are obliged to try on their selection of garments in a small crowded space, and admire the fit in a mirror that in many cases shows only a portion of the garment.

The show case containing the sundries in a nice drug store looks very attractive indeed when compared with the "hashed up" appearance of the rubber store sundry show case. In some establishments also tables are run cross wise in the store heaped up with garments without regard to order. Although I am in a rubber store myself, I must confess that therefore, the ordinary store is no more attractive or inviting than the two or three story lofts of the jobber, where the retail customer goes because of the possibility of a wholesale price on a retail purchase.

Now I believe a great deal of hustling must be done inside of a retail store as well as in the columns of the newspapers. The condition and appointments of your store is in itself a grand advertisement. Make your store a little more modern-looking and attractive, and keep it looking so and the public will appreciate your efforts. Arrange your show windows as people in other lines of business do and just as often also, always putting in the new articles and by neat little placards inform the public of their use.

The best and lightest part of your store should be devoted to the ladies and misses' garment trade, and should be provided with suitably arranged mirrors for seeing the fit of the garment at all points. Have the floor of this department covered with carpet or large rugs. Have a chair or two so that the lady or ladies accompanying your fair patrons will not be obliged to stand the length of time it takes one to buy one of the better grade of cloaks.

Why not have many of the garments on hangers like those used in the fashionable cloak stores of to-day? The old custom of keeping them folded up in boxes and bags, wrinkled in every conceivable shape, was well enough fifteen years ago, when the old black circular had the field all to itself, but to-day it won't do. Have your ladies' shoe department fitted with proper chairs with the neat foot rest that the better class of shoe stores have. Pay particular attention to selling a shoe that fits properly, and avoid crowding on anything that will stay on, so long as you make a sale; for the best shoe made to-day will not wear and give the satisfaction it is capable of giving if put on a kind of shoe for which it was not intended. Educate the people in regard to different brands of shoes and their relative standing in the market that they may buy as intelligently as in other lines where they are wont to purchase.

Have the men's and boys' goods in a department by themselves if possible, and take the same care of it as you do of the ladies' department. Keep your footwear, especially wool goods, properly dusted, and don't be guilty of taking an Alaska or fine arctic from the shelf and standing up before the customer with brush in hand cleaning the dust from it, as I have seen done in some of our retail stores.

The back part or basement of your store is just as good to display your hose, belting and packing as on the counter in the front store, as people coming to buy hose will willingly walk back to look at it, and your display in window or at door will tell the public plain enough that you deal in hose and other mechanical goods. Have your show cases arranged as they should be and the shelves containing small wares, and in sundry department keep so large a variety that a physician in want of something in a hurry will find an article that will answer his purpose, even if not the make he wished; educate your clerks in the use of the different goods in this department, that they may talk as intelligently to a customer as the ordinary druggists are capable of doing, and you will find that this class of trade will pick up amazingly.

Give every little detail about your business, that same amount of care that men in other lines of retail business do, and I think you will have no reason to ask why buyers do not go to rubber stores for rubber goods. In closing I want to say just one word: These suggestions are not aimed at any one store. I believe what I have said, and am trying to live right up to it in my own store. My trade has certainly been better since I waked up on these points, and I intend to keep my eyes wide open for others in this same line.

Hoolihan's Rubber Store.

IN a certain city situated just where it was founded lived a short, stout, red-raced, jolly little bunch of an Irishman named Hoolihan. Just what his age was no one pretended to guess, but that he was old enough to have cut several sets of wisdom teeth was self-evident. Now it happened that a former employer of his, a tight-fisted, contrary old curmudgeon, died, and left Pat his store. The executor advised its sale, but found an unexpected obstacle in the person of Hoolihan, who declared his intention of running it.

"But, my dear sir, you know nothing about rubber. You will fail inside of a month," remonstrated the gentleman.

"Know nothing about rubber, is it?" echoed Hoolihan, indignantly. "Be gob, me father ownded a mine av it in Oirland."

"Not rubber; it may have been—whiting," gasped the executor.

"Sure its ahl the same thing," replied Pat, "An' if I don't make this go its not yersilf that'll suffer."

With that he took possession, and one fine Monday morning opened up in a fashion that made passers-by stare. It happened that he was the father of two fat, red-faced, jolly little editions of himself, and as there was a huge stock of nursing bottles in the place, he utilized his offspring as an advertisement. In other words, he fitted up his window like a crib and put the twins, each with a well-filled bottle, right into it, and let them feed. As the Hoolihans, big and little, were always hungry, the bottles were nearly all the time in use, and when they were not the youngsters crawled round still holding them, attracting as much attention as ever. Motherly Mrs. H. sat in the background, not quite sure of the wisdom of the plan, but with an abiding faith in Pat's wisdom. On the outside of the store was hung a sign ike this:

IMPTY BOTTLES LIKE THIM THE BABIES HAVE—CHAPE.

To say that Pat's stock went rapidly would be to express it mildly. By night every bottle in the store was sold, and the proprietor was wondering where he could get more, when a drummer came in.

"I see you are in the line of druggists' sundries?" he remarked.

"The man that tould you I was a druggist Sundays was a liar,' was the prompt reply.

"Um-er-I mean that you sell nursing bottles and teething rings and nipples and such things."

"I do that."

"Well, the firm that I travel for make a large line of those goods, and I should be glad to place some with you," said the young man, opening his grip. "Now here is our full line of nipples made of pure rubber, the best in the market. Here are all styles, the Davidson, the Maw style—"

"The Ma stoyle, is it? Be gob the baabies should loike that. Sind me a load av them. An saay, sind me a few of the Pa stoile for childther that haven't got anny mas."

"Very well sir," said the drummer entering the order. Now about teething rings—you will need some of them. Here is a very fine article, excellent stock, and of the greatest assistance to an infant in cutting its teeth."

"I niver thought much av thim things," said Hoolihan dubiously. "I've raised tin childther and not one av thim iver had a ring, barrin' the top av a boot leg that I cut off for thim to chaw on. Phwat for should folks want their teeth to come for? Sure its soon enough they get atin' mate, an' it's long before they paay for it."

"Very true, sir, but people will want to buy them, and every rubber store has them."

"You may sind me a few—about a barrel av thim," said Hoolihan, after a thoughtful pause. "An' saay—tell the man that makes thim to dye thim grane so that they'll sell well to me friends."

"I'm very sorry, but the dye that we have to use for that purpose comes from Siberia, and the war with that country makes it impossible for us to furnish any other colors than black and white," was the graceful reply.

"Oh yis, I remimber, an' which is gettin' licked, the Sibarians or—or the other fellers?"

"The others," said the drummer. "We shipped them six hundred rubber cannon last week and we think it will end the war; but by the way, how are you on belting?"

"Belting is it? Be gob, it's me strong-hold. Sure I belted the loife out av a policeman lasht week whin he was thryin' to pull me in."

"You don't exactly take me. Have you any rubber belting in stock? Belts for running machinery, you know."

"Oh—yes—I see. No, I have none at all. Sind me a couple av yards—I can use it for blankets if nothing else."

"Very well sir,, two rolls, what ply?"

"Ply is it?"

"Yes."

"All right, make it ply or not, as you plaze, but moind now, give me the best prices yez have, on all thim things, or never another ordther do yez get here. Good daay."

And the drummer departed wondering whether he had struck a fool or a genius, which question the future was soon to answer.

Where the Rubber Comes From.

THE figures below, furnished by the Collector of the Port of New York, indicate from what sources the importations of India rubber and gutta percha have come during the five months from November, 1889, and March, 1890, though not indicating in all cases the countries producing the same:

	Pounds.	Value.
Brazil	10,941,327	$4,650,307
Ecuador	221,238	70,573
Peru	4,288	1,332
United States of Colombia	297,661	117,563
Venezuela	22,719	11,944
Costa Rica	6,481	2,044
Guatemala	77,450	32,285
Honduras	103,405	46,683
Nicaragua	144,000	74,420
San Salvador	18,558	6,122
British Honduras	18,536	8,939
Mexico	68,762	19,602
England	1,490,018	660,879
Scotland	160	73
France	182,122	96,320
Germany	354,888	145,425
Netherlands	169,368	44,594
Portugal	169,973	59,141
Belgium	4,380	2,400
Hayti	2,000	1,000
British West Indies	800	330
British East Indies	296,093	92,048
Dutch East Indies	52,407	15,316
French Africa	6,251	1,750
Africa, other ports	23,878	9,850
	14,276,863	$6,170,940

First Class Help In Rubber Factories.

A VERY successful manufacturer, and one who most conscientiously spends a greater part of his time at his own mill, in speaking of the fact that he needed the right sort of assistants, said :

"It is amazing to me how few of my men are thoroughly fitted in the business they have chosen. I think perhaps my men are as bright as any other hard workers, but as for grasping the whole situation so that I can take any one of them and putting him in my place, go away and leave the factory, and be sure that it will be all right, I don't feel that it can be done."

Now, from our knowledge of many mills, we feel that there is considerable truth in this that applies to almost the whole business. Fully furnished rubber men are a scarcity, nay, even when it comes down to thoroughly competent heads of departments, they are always in demand.

In saying this, we do not wish to disparage the capability of any rubber workers, but our attention has been more and more called to the fact that many mills are always on the lookout for better calender men than they have; that many manufacturers wish for more competent help, advertise for it, and even try to entice it away from other rivals. Now, this being the case, what reason is there for it? Every effect has its cause. Why is it that in so important a business as the manufacturing of rubber goods competent men are at so large a premium? At the risk of harping on a cord that we have played upon before, we wish to say that in our sober judgment the manufacturers themselves are to blame for the want of skill on the part of their workmen.

To begin with, for years the rubber business has been known as a secret business. Compounds have been kept away from workmen as if they were of the greatest value. Adulterants that came into the factories to be used year in and year out, have been falsely marked. Sulphur has been marked "blue peter;" whiting has been marked "double kaolin;" lamp black has been marked "refined bone black," and many schemes of this kind have been indulged in to keep the ordinary workman from growing.

Now, while the business was a secret business; while rival manufacturers, or men anxious to be rival manufacturers, were trying to steal help that should know the ins and outs of the business, this may have been the part of wisdom. But when it came to be a business in which any man could engage, when the time came when it was not a question of secret compounds, but rather a question of keen figuring, of good management, and of successful marketing of goods, all of this pretense at secrecy should have been thrown aside. The more each workman knew of the details of the factory business, the more valuable would he become. The more the whole working force knew how goods should be turned out, the more critical eyes there would be upon the result, and the nearer perfect they would be. Nay, further, it has been proved that from the workman himself often comes the practical suggestion that results in some invention of great value.

To-day, in most of the progressive factories, young men are given a chance. In almost every large rubber factory there will be several bright young men treading on each other's heels in the pathway to the heads of departments, or perhaps to the superintendency. And this is right—the business is better for it, the men are better for it. The quality of the goods produced by any manufacturing house is valuable in proportion as the help is skilled and as they are interested in their work. Ten years from to-day we predict that there will be infinitely more skill to be found in the grinding-room man, in the calender man, in the heater man, and in the heads of departments. The sooner they reach perfection in their special lines, the better will it be for the general rubber business.

United States Awards of Contracts.

THE list of awards for next year's supply of stationery for the Interior department includes the following items of rubber goods :

THE B. F. GOODRICH CO., New York :
288 gross rubber bands, 0¼ ..... 22½c per gr.
3240 gross rubber bands, 00¼ ..... 34c per gr.
1080 gross rubber bands, 0000¼ ..... $1.39 per gr.
10 dozen hard rubber rulers, 16 in ..... $1.65 per doz.

PARRER, STEARNS & SUTTON, New York :
576 gross rubber bands, 00½ ..... 66⅔c per gr.
2160 gross rubber bands, 000¼ ..... 40½c per gr.
2160 gross rubber bands, 000½ ..... 84c per gr.
576 gross rubber bands, No. 11 ..... 5⅓c per gr.
16,000 gross rubber bands, No. 32 ..... 19½c per gr.
200 dozen rubber finger shields ..... 25c per doz.

WILLIAM BALLANTYNE & SONS, Washington, D. C. :
10,000 gross rubber bands, No. 16 ..... 7¾c per gr.
576 gross rubber bands, No. 19 ..... 9¾c per gr.
20 dozen pocket inkstands ..... $4.38 per doz.
20 dozen hard rubber rulers, 14 in ..... $1.35 per doz.
20 dozen hard rubber rulers, 18 in ..... $1.90 per doz.

W. A. WHEELER, JR., New York :
100 dozen combined pencil and ink erasers ..... 95c per doz.
20 dozen hard rubber rulers, 12 in ..... $1.18 per doz.

E. MORRISON, Washington, D. C. :
300 pounds artists' rubber ..... 80c per lb.
500 dozen combined pencil point protector and rubber eraser ..... 14½ per doz.

STUART BROTHERS, Philadelphia, Pa :
2500 cakes rubber ink erasers, small ..... 2½c per cake.

JAMES J. CHAPMAN, Washington, D. C. :
1800 cakes rubber erasers for typewriters ..... 2½ per cake.

How Would Rubber Pavements Do?

THE horseshoe of the present should be improved, says the *Scientific American*. There needs to be something which will save the hoof from an undue wear and breakage, while at the same time permitting of elasticity of movement when the weight of the body is alternately borne upon and taken from it.

The New York *World* suggests that an improved roadway is needed in this climate; something that will wear as well as stone, be as easy to pull on as asphalt and give the horses' feet a good grip, so that they will not slip even in rainy weather.

R. D. EVANS, president of the American Rubber Co., has purchased a summer residence at Beverly, Mass.

The Speculator's Scheme.

THE Rubber mills were working fast
As through the busy mart there passed,
A broker, with a heart of ice,
Whose banner bore this strange device:
§ Old Fine Para. §

His calculating eye caught sight
Of prosperous mills worked day and night;
He figured up the great demand
For rubber goods all through the land,
§ § Made of Para. § §

"At last has come the favoring time;
The Alps of wealth I now may climb;
And manufacturers, come what may,
A good round price will have to pay!"
§ § § For Fine Para. § § §

His brow was glad; his eye beneath
Flashed like a falchion from its sheath,
And like a silver dollar rung
The accents of the schemer's tongue:
§ § § § "Up Fine Para!" § § § §

"The Amazonian crop is short!
The 'Negro head' has all been bought!
And useless 'tis to further seek
For 'Central,' 'Strip' or 'Mozambique!'
§ § § § § Up goes Para!" § § § § §

The rubber men heard this loud blast,
And said: "Young man, don't go too fast.
We've heard this selfsame cry before,
Yet rubber fields keep yielding more
§ § § § Of Fine Para." § § § §

"Don't try to push the price too high,
Or we shall leave you bye-and-bye—
We'll cultivate the rubber tree,
And from all middlemen be free.
§ § § Our Own Para!" § § §

"Why should we fear a rubber drouth?
We have already in the South
Large orchards of fine rubber trees—
The price shall be, sir, as we please
§ § On Fine Para." § §

The speculator paused, dismayed,
His schemes before him scattered laid;
And while he sank back, in despair,
A quivering voice rang through the air,
§ "Down goes Para!" §

Buying Rubber in Africa.

ON the southwest coast of Africa, between the river Congo and the Portuguese city of St. Paul de Loanda, a small rocky neck of land fifty feet above the sea juts out sideways into the South Atlantic, separated from the mainland by a narrow river which winds around its base. The top of this point is nearly flat, and behind it the ground is flat and swampy for about three miles inland, beyond which the country extends in broad undulations covered with long yellow grass, and thinly wooded. Here and there dotted about are the small villages of the natives, each consisting of, perhaps, a dozen neat huts surrounded with patches of cultivated ground bearing the cassava root, the staple food of the people.

The point is Kinsembo Point, one of the chief ivory and rubber trading stations on this coast, which, though once the shipping place of thousands of slaves, now exports only such native products as rubber, ivory, palm oil, gum copal and ground nuts, from which latter olive oil is extracted. The natives will not allow the Portuguese traders to establish themselves here, possibly because of their former connection with the horrid slave trade. Three of the houses or factories, as they are generally called, fly the British ensign, and one the French tricolor. A factory is frequently a long wooden building of one story, one end used for living in, the other being occupied by a large room, where all the cloth used for the purchase of produce is stored. The less valuable articles of trade are placed within the stores in the yard of the factory. In the yard are wooden or mat huts for the natives, and the servants belonging to the factory, the total number of whom may amount to thirty or thirty-five men. No women are employed.

On entering the dwelling, a large dining room presents itself with whitewashed walls, and floor holystoned as clean as the deck of a ship. In the centre stands a long deal table, with cane chairs and a comfortable sofa or two. A few engravings, a spy-glass, and a stand of rifles embellish the walls. Windows there are none—only openings furnished with lattice-work, through which the soft breezes come. Leading out of the dining room are the bedrooms, each furnished in the scantiest manner, as befitting a hot climate and a solitary place.

Rubber, to deal more particularly with it, is brought in by native dealers, who have bought it from the native gatherers. The product is carried in mattets, or baskets, chiefly by women, for long distances in the interior, guarded by fighting men, each caravan being announced, when it is already five miles away, by the sounding of trumpets and the blowing of whistles, and the beating of tin pans. Meanwhile the natives who have bought the rubber in the interior put themselves, their men, and their property into the hands of middle men or brokers, called "gentlemen," who keep them and theirs during their stay on the coast, and sell their produce for them to the white men, taking a portion of the proceeds as "guimble" or brokerage.

These "gentlemen" are men of importance, able to speak broken English, which fits them for the position they occupy. Two or three of them are retained by each factory, and live by turns at it, and are supposed to bring to the factory to which they are attached the best part of any trade they can influence. Say that the arrival of a "cabuca," as in some sections these caravans are called, has been announced, and that the time is 5 o'clock on a certain morning; the Point is alive with small crowds of Bushmen, as those who live in the interior are called by their brethren of the coast, hurrying from one factory to another carrying the products of various kinds, each party accompanied by its "gentleman," who, with a fine print cloth around his loins, a brilliantly colored shawl thrown over his shoulders, and a coral bead necklace round his throat, looks eminently respectable beside the dirty and ragged Bushmen, whose merchandise he has to sell.

Seated round the door of the cargo-room, or leaning against its walls, are the filthy and repulsive Bushmen. Their heads are covered with great bushes of wool, and a cloth, greasy and black, is twisted about their loins. Brass rings, made out of Birmingham brass rods, adorn their arms and legs; while heavy knives of their own manufacture from hoop iron hang by their sides. The cargo-room is fitted up on one side with shelves, upon which are laid piece upon piece of cotton cloths,

mostly of coarse qualities, printed in stripes or checks of blue and white, or blue and red, or with variegated patterns on blue grounds. Close by these are piles of finer prints, mostly in bright and showy colors; also hankerchief and shawl pieces for holiday attire. These and other goods are for the purpose of being exchanged. Meanwhile buying has commenced.

The rubber, ivory, or whatever it is, having been weighed, after due inspection the buyer makes an offer for it, in three chief articles of trade—namely, guns, gunpowder and cloth. "No fit," perhaps exclaims the "gentleman" as soon as he hears the offer, for a bargain is never struck by a black man in a hurry if he can help it. He generally believes that he is going to be cheated, or in his own ability to cheat, and as a rule refuses the first offer with apparent disdain, mentioning with the same breath his willingness to accept perhaps double what is offered. At length, however, after successive attempts to obtain a little less than double, he generally holds a consultation with his clients, and as a result the buyer perhaps makes some little concession, such, for instance, as the addition of a keg of powder or a "long" of cloth, which increase is announced in a tone of voice that indicates no more will be given.

After another talk, and when the buyer has been asked again for his "last mouth," and it is seen that nothing more is to be got, the "top" is asked for. Whatever price may have been agreed upon, a top, or present, is always expected. The top, consisting perhaps of a soldier's coat and a bottle of gin, having been decided upon, a "book," as all papers or documents are called by the natives, is given by the buyer for the amount agreed upon. A "matabicho," as "kill-the-worm," of rum, gin, or coarse liquor, is then drank, and the next lot of produce is offered.

With some black traders it is necessary—so confident are they that a first offer made to them is not a fair one—to offer very much less than what is really intended to be given, advancing gradually to the price determined upon, when they will think they have gained an advantage. A few old traders come to the point without much delay, but these are indeed few and far between, so that when a "cabuca" is a large one, buying goes on all the day, at the end of which time but a comparatively small amount of stuff is found to have been disposed of. After a cabuca has been bought, there comes the paying or redeeming of the "books" that have been given for it, which is done on the following plan: Although each sale is "talked for" in only three of the many different kinds of goods in the white traders' stores—namely, guns, gunpowder and cloth, it does not follow that these three articles alone are paid away; a proportion of each of them is so paid, the balances being exchanged for other goods, according to a fixed tariff of values perfectly understood by the "gentleman."

It may be that only a fifth part of the number of guns offered is paid in guns, the balance being made up with brass rods, a certain number of which are equal in value, in the eyes of the natives, to a gun. Of, say, forty kegs of powder, eight kegs are given, the remainder being paid in cloth; and longs of cloth two-thirds are paid in cloth, the remaining third being paid in earthenware, knives, rings, etc. This arrangement, by obviating a number of figures having to be dealt with, not only prevents confusion in the minds of the natives as to what they are to get for their produce, but also enables the white trader to buy quickly. A large caravan will take at least a week to buy and pay for. On the occasion of these sales, before the departure of the natives, they have a "high old time" at the station, dancing and drinking, and in this way much of the results of their labors are left behind with the traders.—*India Rubber and Gutta Percha Trades Journal.*

Instead of Button and Button Hole.

A CORPORATION know as the Consolidated Fastener Co. have for some time past been selling one of the most popular glove snaps that ever has been put upon the market. This snap, which is a combination of a button and a button hole, is an exceedingly simple and very practical thing. It is not only adapted to gloves, but has been found most useful on all clothing, particularly rubber clothing, on ladies' button overshoes, and in various places where the button and button hole have heretofore been in vogue. At the present time many of the rubber manufacturers are adopting this button. They find that with it all of the trouble they have experienced heretofore with button hole machines will be done away with. They see also that one girl with a machine for attaching these snaps can do as much as twenty girls would with the ordinary button hole machines, there being no doubt but she could attach them to 200 gossamers in a day. The apparatus for attachment is also

so simple that it cannot break down, and it costs nothing to the manufacturer as it is presented by the company who manufacture the fasteners. The fasteners will stand a surprising amount of wear. A dealer set one of his hands at work fastening and unfastening as rapidly as possible until it was done 10,000 times, and at the end of that time the attachment was just as good as at the beginning. Mr. Frank E. Hall, who is so well known as a practical rubber man, and one with push and energy, has secured the United States agency for this article for a term of years, and has already contracted with numbers of rubber men to furnish them for their work during the coming season. There is no question but what there is a call for an attachment of this kind, and to the best of our judgment we should say that the Consolidated Fastener Company's attachment is by far the best thing that we have ever seen. Mr. Hall has handsome offices at No. 67 Chauncy Street, Boston, where he would be very glad to talk with the rubber men, or in fact, any who are now making garments where the button and button hole is in vogue.

Hints on Foreign Trade.

NO country in the world is extending its foreign trade faster than Germany to-day. The Germans are swelling their exports, including rubber, to countries which England and France have heretofore considered wholly and securely within their own grasp. The annual exports to Brazil, for instance, now amount to 6,000,000 marks more than eight years ago, while the exports of England and France to Brazil are falling off. The Germans attribute much of their success to the care with which foreign languages are studied by their commercial men.

"Right here is where the Germans are going to beat the world," said the superintendent of a German factory, who understood English, Spanish, French and Italian, to an American who knew only his own tongue. "Not only their art and industrial schools, but those for language and commercial training, are going to give them the wing-footed, or rather wing-tongued, messengers of trade."

India Rubber Cement.

ANY one unfamiliar with the rubber business would not, in the wildest guess, be able anywhere near to approach the amount of rubber cement that is used in various industries throughout the United States to-day. So varied are these uses, and so large is the daily consumption that many factories are run alone for the manufacture of rubber cement, and the total volume of yearly sales running up to hundreds of thousands of barrels.

The most prominent use to which rubber cement is put, outside of its use in rubber factories, is in leather boot and shoe work. For this purpose a special cement is manufactured, either from Para rubber, or from a nice grade of Madagascar, which is supposed to have certain qualities that differ a little bit from the regulation cement. The process of making it is exceedingly simple. The hams of rubber are stripped open, one layer after another being thrown off until it takes the shape of a pile of thin skins. These are then put into what is called a "muddler," which is a tumbling barrel, in which is a certain amount of benzine, and there it is allowed to revolve until the rubber has absorbed almost all of the benzine and is in a thick, tenacious pasty mass. In order to help the sticking qualities, sometimes a little resin is added to the mass.

A cement that is very similar to this, is used in the hat trade, and one that is a trifle thinner, but made in the same way, is used for veneers.

A black rubber cement that is in use for patching rubber shoes and boots in almost every repair shop is made of much the same compound that an ordinary shoe upper compound consists of, and contains enough litharge to act as a dryer.

Perhaps one of the best and highest cost cements that is in use to-day is that which is used for mending bicycle tires. Where a genuinely fine cement is wanted, camphene or benzine either, are not the best solvents, bisulphide of carbon having been proved to be very much better, although more expensive.

In factories where cement is used for sticking seams, or any ordinary shoe work, the compounds as a rule are very good—indeed among the best that are used, for however poor the goods are that are to be put together, it has been found to be the worst sort of economy to attempt to use a poor cement. In rubber shoe factories, what is known as the "yellow cement," is, as a rule, made of the best of Para rubber with a little litharge and enough sulphur to insure its curing when the goods are in the heater.

Of course, speaking of cementing in rubber factories one is naturally led to the thought that the spreading of gossamer work is, after all, only one system of cementing. In work of this kind, however, the compound is exceedingly thin, and it takes anywhere from eight to thirty coats to get the right thickness for cloth. In the English doughing machine, the rubber is reduced to a cement, although a very thick one, and it is the adhesion of the sticky mass to the cloth that forms the spread sheet.

A great deal of experimenting has been done in the line of cements that are to hold rubber to iron, but most of them are more or less faulty and fail just at the critical time. At the same time, there are methods of so preparing an iron shaft that being wholly cleansed from all grease, it will stick to certain compounds so solidly that it is almost impossible to tear it away.

Definite Standards in the Rubber Business.

NOWADAYS, in almost every line of commercial enterprise, crude stock of any kind is measured by certain standards that are absolute. The price paid by the importer or by the purchaser of these goods, depends entirely upon their purity as compared with this fixed standard. For example: a cargo of sugar coming to this country is carefully examined by having a certain number of casks bored into, a tiny scoop taking a portion of the sugar not only from the end of the cask, but from the centre. This sugar is then tested by the polariscope, and the price paid for it depends upon the amount of saccharine matter that is found in it. It will thus be seen that in sugar, for example, there is an absolutely fixed standard, and no one in buying a certain amount of sugar fails to get that amount.

In contrast to this, is the manner in which the rubber business stands. In the importation of the highest grade of rubber, Old Dry Fine Para, what is a standard? In other words, if a man pays ninety cents a pound for this, how much rubber does he get? Any broker or manufacturer will answer you that that depends altogether on the amount of shrinkage that the rubber undergoes after being washed and dried; but when you ask him exactly what that shrinkage should be for the ideal Para of this class, so many different answers will come from different experts that the investigator will soon learn that there is no definite standard.

New crop rubber is in the same condition of misty uncertainty. The shrinkage may be one figure, or it may be even ten per cent. more, and the buyer will have hard work to prove to the one from whom he purchased that he did not get exactly what he called for.

Of course it is well known that in the coarser and poorer grades of rubber where the shrinkages run from thirty to forty, and even fifty per cent., that they are farther away than any from having a fixed standard of purity.

Now, we are not going over this ground because we have any complaint against broker, or even native rubber gatherer. The purchaser of crude gum who imports a large amount of it, and knowing that it is full of moisture, and that he has paid for that, justly expects to get his money back. He therefore stores the gum in a cellar that semi-occasionally absorbs the wetness of the highest tides, or that is at least in itself so damp that the moisture for which he has paid seventy or eighty cents a pound will not escape him. The rubber manufacturers do not object to this, because they know that it must be done as long as the rubber comes to this country in that shape.

The same uncertainty as to definite standards exists in the manufactured rubber goods. Pure gum, in many cases,

means nothing more nor less than compounded rubber. One man's "standard" hose is another man's "extra." Of course in manufactured goods there has been no concerted attempt to make goods of one standard. Perhaps it would not be wise. While compounds rule about the same, while the general manipulation of rubber is almost identical in all factories, it must be remembered that there is a certain intuitive skill in manipulation which produces better results than those attained by only ordinary work. Two manufacturers, rivals, may use exactly the same compounds—as nearly as possible they may use from the same lots of rubber—and yet, one man's goods will be far better and more lasting than the other's. Of course there is a reason for this. It may be in the milling of the rubber; it may be in the careful vulcanization, but wherever it is, these conditions exist, and make it a most difficult thing to form fixed standards of value in any line of manufactured rubber goods.

That as the business grows older and increases, there will be a nearer approach to recognized standards, there can be no doubt. Any growth in this line will be of advantage to the rubber manufacturer, for the reason that many buyers of rubber goods who have no technical knowledge of their manufacture, who acknowledge themselves to be poor judges of quality, when once fixed standards are established, will be so placed that they can purchase without fear of loss—in a word, can take the guarantee of any company through the quality stamp that will appear upon the goods.

Wants to Know About Java Rubber.

EDITOR OF THE INDIA RUBBER WORLD:—A good many years ago, when I was a boy in the rubber business, we used to have a gum which went by the name of "Java" rubber, and which was an exceedingly valuable rubber. We used it in many places with very good results, where now we are troubled to find a medium priced rubber that will easily fill the bill. I am led to think of it again by glancing over some of my old compounds, nearly all of which have a certain modicum of Java rubber in them. In talking with a gentleman who has long been associated with the rubber business about this Java rubber, he tells me that the reason that none of this rubber is put upon the market to-day is that years ago when the English were at war with India (I suppose the time of the Sepoy rebellion) the natives, supposing that the English were more particularly after the rubber than anything else, destroyed the Java rubber forests, and that they have never grown up again. I write this to ask if any of your readers know about this matter, and whether it is so. If Java rubber is now coming to this country under some other name, I should be pleased to know it, but it is a long time since I have seen any.

W. K. M.

DR. PURCELL TAYLOR, of England, claims to have made a new insulating material, having all the properties of gutta percha. The new substance is very tough and elastic. A piece of iron covered with this "Purcellite" was, he states, hammered out flat, then bent and twisted until it broke, without even cracking the covering. The cost is said to be less than that of gutta percha.

Note on Vulcanized Caoutchouc.

EDITOR OF THE INDIA RUBBER WORLD:—It may be of interest to those who manufacture and handle vulcanized rubber goods, and who are acquainted with the difficulty of desulphurizing the surfaces of the so-called "White Goods" for the purpose to prevent a later cropping out or efflorescing of sulphur of the goods when stored, rendering them useless and unsalable, to know that I have found a convenient and cheap method of attaining this object, giving more satisfactory results than any other, which, to my knowledge, have hitherto been in use.

The material I recommend, to obtain a more perfect surface devulcanization, is the Sodic Sulphite (Na O+SO 2), the combination of sodic oxide with sulphurous acid, a commercial article. The manner of operating is the following: In a porcelain-lined iron kettle (called agate ware) a solution of the crystalized sodic sulphite (1 pound of the salt to 1 gallon of water) is heated to boiling, the rubber articles to be treated placed in a basket of a convenient shape, either made of wood or of agate—or stone ware—are then suspended in the hot solution for two to three hours, the basket with its contents shaken from time to time, in order to bring the surfaces of the articles in close contamination with the salt solution, which during the operation must be kept at the same level by adding hot water, which was lost by evaporation. When heated long enough the vessel is removed from the fire or steam bath, and the whole covered with a board or a wooden cover, is left standing for twelve hours more. After that the basket with its contents is taken out, the rubber articles are then carefully washed, first several times in clean water, then in a strong soap solution, to which some powdered sand or pumice was previously added, and lastly, again washed in clean water and then dried.

The washing and rubbing with soap and fine sand, or another sharp silicious material, is necessary for disposing of the substances which were set free by the operation, still adhere to the rubber. An addition of a small quantity of very diluted sulphuric acid (1 acid to 20 water) to the salt solution, after being removed from the fire and cooled, will sometimes benefit the operation by the increase of the power of the reaction of the sulphurous acid, partly set free. The sodic sulphite used may be the commercial article, but must be fresh and crystallized.

H. GOEBELER.

Some Brushes Come High.

TO show how much money can be put into a brush, we give a few quotations of the best manufacture, as obtained from a leading New York house, all prices being by the dozen:

Round paint brushes, pure Russia bristles	$ 96
Coach, fine white selected bristles	60
Palace car chisel, French bristles, finely ground	36
Stucco, leather bound, all white Russia bristle, flat	68
Nickel bound, turned handle, Russia bristle, flat	80
Whitewash, leather bound, Russia bristle, flat	176
Kalsomine, brass bound, yellow Okatka bristle	150
Horse, yellow OK bristle, extra stiff	160
Shoe, all grey Russia bristles	48
Stove, all grey Russia bristles, extra stiff	66
Hard wood floor, white horse hair	84
Hearth, French bristles, ebony	40

A good brush, well taken care of, and rightly used, will last a generation, and is selected with as much care by an expert, as a party in moderate circumstances would use in buying a watch.

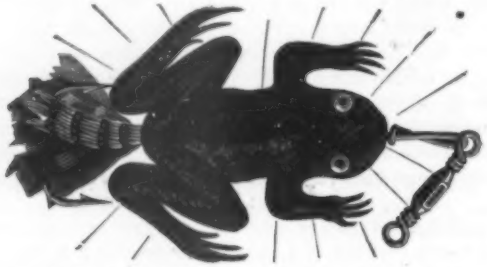
New Goods in the Market.

TO MANUFACTURERS AND PATENTEES:

It is our aim to embody in this department descriptions and illustrations of all the latest novelties introduced in the market, to the end that jobbers, retailers and buyers of rubber goods generally may look here for information as to everything new that each month or season brings forth. Manufacturers and patentees are, therefore, most cordially invited to co-operate with us in making the department as complete and attractive as possible—the distinct understanding being that no charge whatsoever, either direct or indirect, will be made for these publications. Our reward will come through giving our readers valuable information; and that will be reward enough if manufacturers but give the information freely and in all cases at the earliest practicable moment.

In forwarding descriptions of new goods, be careful to write on one side of the paper only; be brief, but always write enough to give the buyer a clear idea of the article you offer; give your full address, plainly written; and in all cases send a small illustration or wood cut if you have one.

IT is bad enough for an unlucky fish in chasing a tempting morsel of a worm, or an appetizing frog, to find that within the body of the bait is concealed a hook, but what must be its feelings when it finds that not only the hook is there, but the bait, instead of a live organism is merely made of soft rubber. This is what the most alluring bait is to-day made of. We illustrate



here a frog made of soft rubber, which has been the means of tempting many a hungry pickerel from its haunts in the lake to sure destruction. Looked at from the fisherman's standpoint this bait is the most practical, the most durable, the easiest to secure and the easiest to handle of any that is to be found above or below ground. For sale by Horace Partridge & Co., Boston, Mass.

—Another beautiful piece of red rubber work is the Red Chief Pouch which we here illustrate. Those who understand the art of using Golden Sulphuret of Antimony in India rubber succeed in producing goods that not only are very lasting but

that certainly are among the most beautiful that can be prepared from India rubber. This pouch is made by the Davidson Rubber Co., of Boston, which in itself is a recommendation as to the good stock and the excellent finish put into it.

—Barnett's Calisthenic Bands and Chest Expanders, for use in the school, home and office, are designed for the expansion of the lungs and development of the chest by easy and graceful exercise. It is claimed for this apparatus that it calls into play more naturally than any other system the natural motions of the body. It supersedes the gymnasium, with its multiplicity of appliances and requisites of special place and dress. When not in use it can be rolled up, occupying so little space as to admit of its being carried in the pocket. To relieve the weary if not painful feeling caused by constant sitting at the desk or in a constant position, *this apparatus can*

FIG. 1.

FIG. 2.

be used without rising from the seat. It is also adapted to use in classes. Of the cuts herewith Figs. 1, 2 and 3 indicate different uses to which the Expanders may be used, and Fig. 4 shows one rolled up. Manufactured by S. M. Barnett, No. 380 Sixth Avenue, Brooklyn, N. Y.

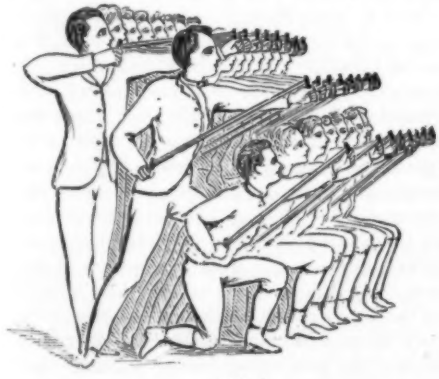


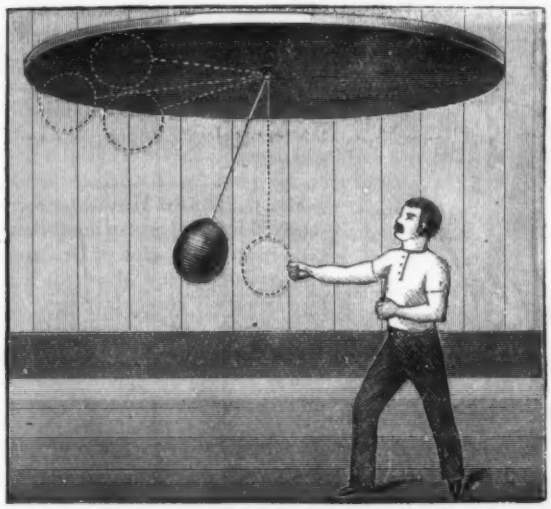
FIG. 3.

FIG. 4.

—We are exceedingly obliged to Mr. J. F. S. Huddleston, the well known scientific instrument maker of Boston, for a beautiful pocket thermometer which he presents to the Editor of the INDIA RUBBER WORLD. This little instrument bears evidence of that careful finish which all of Mr. Huddleston's work shows. In its case of morocco, lined with silk plush, is the tiny bulb and tube, which registers the heat and cold by both Fahrenheit and Centigrade, and in a most accurate manner. Mr. Huddleston is an old friend of ours, although it is only

lately that we have made his acquaintance. Our friendship dates from the time when we discovered that his thermometers on vulcanizers were so excellent that they were not troubled by the many breakages and inaccuracies that the ordinary goods develop.

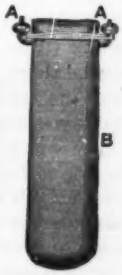
—To the amateur, or to the professional athlete, no exercise is better than striking the bag. The style of Striking Bag here illustrated is for home exercise, one that is exceedingly popular. The cover is made of leather, and encloses an inflated rubber



bladder. The bag is suspended from the ceiling by a cord, and is struck up against a wooden ceiling when a very quick rebound is desired. For ordinary exercise, however, it may be used in connection with any common ceiling. Manufactured by Wright & Ditson, Boston, Mass.

—We have been asked more than once to give information as to what the body protectors that base ball catchers wear are made of. We illlustrate one here which is made of a fine grade of rubber and inflated with air. It is exceedingly light, and so much so that it interferes in no way with the movements of the wearer either in running, stopping or throwing. When not in use the air can be let out and the protector rolled up in a very small compass. For sale by Horace Partridge & Co., Boston, Mass.

BODY PROTECTOR.



ICE BAG.

—The uses to which India rubber is put are manifestly very remarkable. We illustrate here a simple arrangement for producing a cold effect. It is an ice bag which is so arranged that it can be placed against the head, or indeed any part of the body, and being filled with broken ice, has been found a remarkable thing for reducing local inflammation. Manufactured by Codman & Shurtleff, Boston.

—Something that dentists highly appreciate are disks made of corundum and celluloid. These disks are made of the same

material as the celluloid tip and are quite flexible. They are made by the S. S. White Dental Manufacturing Co., Philadelphia.

—The ordinary method of applying acid flux in soldering is crude and troublesome. An old bottle, with a stick or a swab gives an impression of "thumb work" that is far from pleasant. A new and practical idea, that is sure at once to be appreciated, is shown in the Economic Flux Bulb. To begin with it is made of a fine quality of rubber; and while it resists the acid as well as glass, there is no danger of its breaking. It

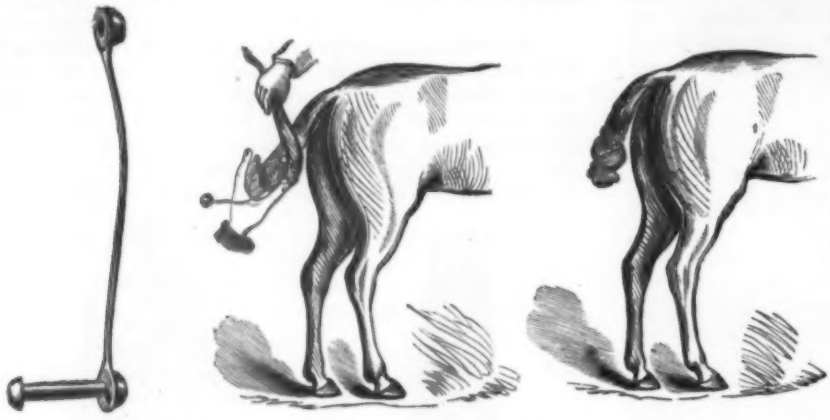
ECONOMIC FLUX BULB.

is furnished with a wick, through which flows the flux in just the quantity needed. It is far more economical than the old method, because none of the flux is wasted. With the bottle and swab, fully one-half of the flux is thrown away, with the bulb no more is fed out than is actually needed. It is compact, handy, easily filled and easily cleaned. Manufactured by the Boston Woven Hose Co., No, 226 Devonshire Street, Boston, Mass.

—An article that goes with garden hose wherever it may be used is herewith illustrated. It is Hudson's Hose Mender, and is probably the only practical device for mending hose easily. One very nice thing about it is that it needs no skill to mend a break or leak in a piece of hose, the apparatus being so

simple that a boy twelve years of age can use it as well as a grown man. Described briefly, it consists of a metal tube to put inside the hose, bands to bind the hose to the menders, and pliers with which to fasten the bands. Manufactured by the Boston Woven Hose Co., No. 226 Devonshire St., Boston, Mass.

—An article that should be popular among horsemen is Wilmot's Patent Improved Horse Tail Protector. It consists of a short bar with two heads or buttons on the ends, to which is attached a rubber cord having at each end elastic sockets corresponding with the buttons. The idea is to allow of the



horse's tail being twisted around into a knot which is held firmly by the protector. This not only keeps the tail clean, but it saves an immense amount of combing and brushing which is so destructive to the hair. Manufactured by J. Francis Hayward, No. 160 Congress Street, Boston, Mass.

—A new and quite popular football inflator, which is the subject of a patent, is a syringe-shaped bag of India rubber with a valve in one side, so that the largest football can be easily in-

flated by it. It is said to be much better than inflating a football through the ordinary brass key by the breath, as the moisture that condenses in the football from the breath is very apt to rot it. Manufactured by Wright & Ditson, Boston, Mass.

The Difficulty in the Way of Manaos.

IN the May issue of THE INDIA RUBBER WORLD, we find an interesting article on the rubber trade of Brazil. It appears that Manaos is the capital of the province of Amazonas, is the centre of the most important rubber district in Brazil, and has a rapidly increasing export trade, whereas that of Para, its principal rival in the rubber business, is steadily decreasing. The river Amazon is navigable up to Manaos for vessels drawing as much as 24 feet, and already two lines of ocean-going steamships visit the port at regular intervals, taking mixed cargoes of manufactured goods and bringing away rubber. There is one great obstacle to the development of trade between Manaos (which is described as a very thriving city) and the United States, and that is the absence of telegraphic communication. Para, being the most powerful province, refuses to permit the laying of a cable, but in any case, we should think, no one would propose to lay a cable 600 miles along a river. What is required, as the article points out, is a line from Manaos to Georgetown, British Guiana, a distance of about 600 miles. For the greater part of the distance the rivers Negro and Branco could be followed, and at Georgetown connection could be made with the West India system of cables, thus securing direct communication with the United States. That such a line would be comparatively easy to construct there seems to be no doubt, and the enterprising concessionaire would get very handsome returns; the only difficulty we see in the way is that of getting a concession to build and maintain the line, and given the rivalry between Para and Manaos and the present unsettled state of affairs in Brazil, the difficulty seems to be rather a serious one. The Brazilian Government, too, is not famous for good faith and strict uprightness in the matter of telegraph concessions.—*Electrical Review, N. Y.*

MR. J. FRANCIS HAYWARD recently received a pair of rubber boots that had been in the possession of Dr. James F. Harlow, of Quincy, Mass., for a trifle over seventeen years. During this time he had worn them winters and in sloppy weather, and they kept out the wet as well as a newer and more modern pair would have done. The boots were made by the Goodyear Metallic Rubber Shoe Co., to whom Mr. Hayward sent them, and in return received a letter of thanks from Superintendent Saunders. He located the boots, in point of time, to be more than twenty-five years old. We suppose the pessimist who reads this will inquire why is it that the rubber companies do not make such footwear now, to which we would respectfully reply that they do.

One of the Hodgman Factories Burned.

THE branch factory of the Hodgman Rubber Co., at Mt. Vernon, N. Y., was set on fire on the afternoon of May 26th, it is supposed by an explosion in the vicinity of the boiler and engine room. A small boy gave the alarm. Work had just ceased for the dinner hour, and but few persons were in the building. All hands, many of whom were girls, exerted themselves to prevent the spread of the flames, but all efforts were unavailing. The water supply was cut off by the flames. The Mt. Vernon steamer was attached to a hydrant a thousand feet away, and other companies made use of the Bronx River, near by. Some neighboring houses caught fire several times, but were not damaged badly. The building was near the tracks of the New York Central Railroad, on which traffic was hindered for about an hour.

The building burned was a branch of the company's large factory at Tuckahoe, and was used for the making up of mackintoshes. It was a large frame building, with a good deal of machinery in it, all of which was destroyed, together with the stock of crude rubber and goods in process of manufacture. The total loss is estimated at $40,000, covered by insurance to the extent of $7000. About 200 persons were employed, but they were deprived of work for only a few days. Temporary quarters were at once secured and work soon resumed. The company decided at once to build upon a larger scale, as they had on hand a great number of orders for their goods.

It is claimed that the adjoining buildings would have been saved from any damage if the village authorities had provided hydrants for that unprotected portion of the town.

Trade Notes.

DURING the latter part of May, at the cradle of American liberty, otherwise known as Faneuil Hall, Boston, was held a fair of the Loyal Women of American Liberty. At that fair one of the attractions was the Lawn and Parlor Amusement Game, in charge of the Rubber-Tipped Arrow Co., of Boston. In this game several prizes were given for the most successful shooting, and a great deal of enjoyment resulted to the visitors through their efforts to win the prizes.

—The recent agitation about the planting of rubber orchards evidently has had its effect. Several companies, including the Tyer Rubber Co., have already secured one specimen each of the rubber tree, which are thriving nicely in their Boston offices.

—A gentleman who was formerly the treasurer of the New England Rubber Co. is at present visiting friends in Boston on a brief vacation from his official duties. He is Mr. Wakefield G. Frye, Consul-General of the United States at Halifax, Nova Scotia.

—The Ideal Rubber Co., of No. 1 Adams Street, Brooklyn, have recently enlarged their plant considerably, taking in the whole of another floor of the large building in which they are situated, and fitting up a handsome office at the Adams Street entrance.

—The Dubois Manufacturing Co., No. 621 Susquehanna Avenue, Philadelphia, while manufacturing a great many wheels of all kinds for home consumption and export, are devoting themselves more and more to their new rubber and cushion tire. They have recently put this upon the Broad Street stages in Philadelphia, with the most excellent results. Those stages, which are very cumbersome vehicles, and which, in rattling over the rubble stones, used to make a noise like a monster bass drum, with this attachment have suddenly become so quiet, and run so easily, that those shod with the tires are crowded all the time.

—A recent visitor to this country from England is Charles Standring, M. D., a gentleman who is high up in medical circles. He was accompanied by a patient whom he was taking to Colorado. Mr. Standring is a brother of the publisher of the London *India Rubber and Gutta Percha Trades Journal*, and as was natural became acquainted more or less with the rubber men on his voyage, among whom was Mr. R. R. Whitehead, of the firm of Murray, Whitehead & Murray, Trenton, N. J. Mr. Standring intends visiting Mr. Whitehead at his cottage at Sea Girt during this month.

—The Union Rubber Works, of Morrisville, Pa., it is said, recently offered the Chemical Rubber Co. a royalty if the latter would allow them to manufacture chemical shoddy. This was refused, however, and the result is that the Union Rubber Works are now closed down.

—It is a bit refreshing nowadays, when manufacturers are so anxious for labor-saving machinery, whether it makes better goods or not, to run across one who believes in making the best that can be made, and cannot be tempted by any sort of mechanism away from his standard of quality. Mr. Macgregor, of Rob Roy hose fame, at his factory in Scotland, has no hose-weaving machines. Instead of that, every foot of his Rob Roy hose is woven by hand. To be sure, one weaver can only do about thirty feet a day, but the result is so solid and so strong and durable that it is likely the hand process in the Dundee mills will be continued as long as hose is needed.

—The Empire Rubber Co., of Trenton, N. J., have just fitted up fine new offices in their building on Stockton Street. The additions consist of a private office for the secretary and treasurer and a handsome double office for the bookkeepers and shipping and receiving clerks, the whole being lighted with electric lights.

—The Tyer Rubber Co., of Andover, Mass., are putting in an electric lighting plant of their own.

—The Commonwealth Rubber Co., at No. 9 Murray Street, New York, have leased the whole of the large store there and are rapidly stocking it with a first-class grade of mechanical rubber goods. Mr. Randolph, the energetic treasurer and manager, keeps a force of men out upon the road all the time selling his goods, and has the reputation of being exceedingly successful.

—Mr. A. S. Foster, treasurer of the Chelsea Wire Fabric Rubber Co., has recovered enough from his recent illness to go to Rangely Lakes for a fishing trip. His plan is to be gone about two weeks, and no doubt he will return much refreshed and full of that vim and energy for which he is noted.

—It does not seem possible that so small an article should sell $100,000 worth in a single year, yet that is what Wright & Ditson's Tournament Tennis Ball is doing every year now.

—The Atlas Chemical Co., of Boston, so well known as manufacturers of the best Golden Sulphuret of Antimony that the American market has seen, have added a new department to their works at Watertown, which is the manufacture of regulus of antimony. They are also making a fine grade of white oxide for use in various chemical preparations, particularly mordants.

—As a rule, the starch used by rubber clothing manufacturers contains nearly 15 per cent. water. One company, however, are making a specialty of selling a starch that is as dry as can be prepared. It is hardly necessary to say that this is the S. W. Pearce Co., of Providence, R. I., for those manufacturers who have used their goods will testify at once to the truth of our statement.

—A fountain pen that is said to be really excellent in its whole make-up, and in the results obtained by it, is Waterman's Ideal. It is handled at present by Horace Partridge & Co., of Boston, with whom Mr. Waterman is now connected.

—Mr. George A. Alden has for some little time past been quite ill at his home with rheumatism, but expects soon to have his hand on the helm of business again.

—In looking over the catalogue of the Hamilton Rubber Co. one is a bit startled to see in the representation of a fireman who is pulling a length of hose from off its reel, a first-class likeness of Edgar Whitehead. At the same time, as he used to run with an engine, this is perhaps the right thing.

—Although the Editor of THE INDIA RUBBER WORLD is not a tennis player, he at the same time admires Peck & Snyder's Tournament Tennis Scorer. It certainly is a very beautifully finished piece of celluloid and so compact that it can be easily carried in the pocket.

—The president and treasurer of the India Rubber Publishing Co. take pleasure in voting Mr. William H. Huntington, of the World's Air Mattrass and Cushion Co., a unanimous vote of thanks for his kindness in furnishing the INDIA RUBBER WORLD office with two of his handsome and comfortable chair cushions. One really doesn't know what a pleasure it is to sit down until they have tested these beautiful goods.

—A gentleman who has the reputation of being the best mould maker anywhere within the limits of New York, is William Eggers, No. 45 York Street, Brooklyn. Mr. Eggers worked for some years in rubber factories, and so has a knowledge of the business that enables him to most successfully manufacture rubber moulds.

—The Tubal-Cain Iron Works, on Plymouth Street, Brooklyn, recently shipped a monster press to England. During the many years of his life as a manufacturer of rubber and other machinery, Mr. Robertson has probably built as many presses as any other one manufacturer.

—The Brown-Desnoyers Shoe Co., of St. Louis, are sending out very handsome cards and circular letters to the rubber trade through the West, calling attention to the Candee rubbers which they handle. They also promise some very handsome advertising material to those who will take the trouble to ask for it. A circular of their tennis goods accompanies each letter, giving the different styles that they have in stock and showing a cut of what is a very handsome shoe.

—The Norwalk Iron Works Co., of South Norwalk, Conn., send out one of the handsomest catalogues of their many patterns of air compressors that we have ever seen. It is very handsomely bound in fawn colored, alligator-stamped paper, with a cut of the works on the back cover, and is illustrated throughout with fine cuts of their compressors and pumps. To any one interested in machines of this kind, this catalogue cannot fail to be of definite advantage.

—The City of Trenton, N. J., recently awarded the fire hose contract as follows: Trenton Rubber Co., 1750 feet; Hamilton Rubber Co., 1750 feet; Home Rubber Co., 1000 feet; United Rubber Co., 1000 feet; Whitehead Bros., 500 feet. The price at which this is to be furnished is 90 cents. It is said that the whole contract was offered to Mr. Magowan, but he refused to take it, as he wished his hose to come in competition with that of the others.

—The Wales-Goodyear Co. send out an exceedingly attractive price list this spring, which has on the cover a representation of a tiny Connecticut school-house, in the background. In the foreground are seen three youngsters and a dog. Two of them, a diminutive boy and girl, are drawing a sled, upon which is placed a sizable overshoe of the Wales-Goodyear pattern. In that shoe is a bright looking youngster, who, with a look of supreme contempt on his face, is acting as horseman and driving his two companions over the snowy fields. The design is one that any one would stop and look at and would remember, and that is what is what it is there for.

—In 1872 the fire department in Manchester, Eng., purchased some Rob Roy linen hose of the Dundee manufacture of that brand. From that time up to the present that hose has been in continuous use. A length of it was sent over here about a month ago to show what excellent wearing qualities it had, and the agents for the hose, the Boston Woven Hose Co., took it into their factory and tested it. Of course having been in use eighteen years, it did not appear exactly new, but it did show an amount of strength that was absolutely surprising, and the old hosemen who were gathered around at the test said it was unparallelled.

—Mr. J. A. Barnes, secretary and treasurer of the Akron (Ohio) Heating and Ventilating Co., has lately organized the Cottage Grove Ice Co., at Cleveland, which has a large capital and is already doing a fine business. Mr. Barnes is also secretary and treasurer of that company.

—Just now when the garden hose manufacturers are sighing for a dry, dusty season, the clothing manufacturers are praying for a wet one. We trust they will both get what they wish.

—Mr. Herbert Eustis, the electrician of the Eastern Electric Cable Co., Boston, Mass., has just perfected a system of wire tables, which is published with the price list of the Clark wire and cables. It is proving itself an exceedingly valuable pamphlet, and is to be found in the office of almost every electric-lighting company in the country. Besides these tables are Wiring Formulæ for lamps and for motors, and brief descriptions of the Clark wire, joint gum, and specialties of the Eastern Electric Cable Co.

—Mr. Arthur Clous, son of the proprietor of the Boston Gossamer Co., is on from Chicago for a brief visit at his old home, and for inspection of the fine new plant at Hyde Park, Mass.

—The Boston horse cars are displaying a very handsome advertisement from the Conant Rubber Co., of Boston, in which they describe their brands of garden hose in a business like way that should attract many customers to their handsome store at No. 72 Federal Street.

—Since June 1st, the main office of Lowenthal & Morganstern, has been located at No. 144 Provost Street, near Pavonia Avenue, Jersey City, N. J. All communications to this firm should be addressed to that number. A branch office will be continued at their former address, No. 132 Nassau Street, New York City.

—E. H. Cutler, selling agent of the Woonsocket Rubber Co., who has returned to Boston from his European trip, reports a great benefit to his health, and says that he added fifteen pounds to his weight while abroad.

—The details of the management of the Boston Rubber Shoe Co., during the absence in Europe of E. S. Converse, the treasurer, will devolve mainly upon upon the assistant treasurer, C. C. Converse, who long has been familiar with the duties of the office.

—George D. Clapp, of the Para Rubber Co., will spend the summer at Cohasset.

—The annual meeting of the stockholders of the Brookhaven Rubber Co., was held on June 10th.

—The Derby (Conn.) Rubber Co,, received in one week recently sixteen carloads of stock, being determined not to allow any future advance in the price of crude rubber to find it at a disadvantage.

—About 900 people are now employed in the factory of the National India Rubber Co., which will probably be increased to 1000 in a short time. The pay-roll now amounts to about $7000 per week.

—The Columbia Rubber Co., at Braintree, Mass., propose to increase their business. Their Mackintosh department, at Woburn, is to be removed to the former place.

—A rubber pneumatic tire for bicycles has been devised in Great Britain by an Irish wheelman, which it is expected will do away with the jolting that now wearies riders so greatly in long distance spins. In the new invention the rubber tire is pumped full of air and then tightly closed. The elasticity of the air keeps the wheel from bouncing and trouncing the rider till he is lame and sore. The pneumatic tire adds, however, to the weight of the machine several pounds, and the tube is liable to have holes torn in it on rocky roads.

The United States in the Lead.

THE United States ranks first among all the countries in the world in the consumption of India rubber. Until recently its imports of crude rubber and gutta percha were exceeded by those of Great Britain, but with the important difference that whereas much of the receipts at London and Liverpool are reshipped to other countries, very nearly all the crude rubber imported by the United States is consumed by home manufacturers. Beginning with 1885, however, the relative position of Great Britain and the United States was changed, the latter country taking the lead in imports. Not only do the manufacturers of the United States use practically all the crude rubber that comes this way, but only a small amount of manufactures of rubber is exported. The lesson of all the figures bearing upon this subject is that in the United States all the crude rubber that can be secured is made up into goods and that all the goods that can be made are consumed by home buyers. In an accompanying table is shown a comparison of imports of crude India rubber and gutta percha by the United States and Great Britain for the years 1884 to 1888, inclusive; also a deduction of the exports of crude rubber from each country, the remaining figures forming the most accurate statement available of the amount of rubber and gutta percha consumed in manufactures in the two countries. The figures for Great Britain are compiled from the London *India Rubber and Gutta Percha Journal* and those for the United States from the reports of the Bureau of Statistics of the Treasury Department.

STATEMENT of amounts (in pounds) of crude India Rubber and Gutta Percha imported by the United States and Great Britain; exports of the same from each country, and consumption by manufacturers, from 1884 to 1888, inclusive

	1884	1885	1886	1887	1888
UNITED STATES....	24.574.025	24.208.148	29.263.632	28.649.446	36.628.352
Exported....	539.997	460.310	119.924	638.317	372.731
Manufactured	24.034.078	23,747,838	29.143.708	28.011.129	36.255.620
GREAT BRITAIN.....	26.155.700	23.398.000	23.544,500	26,164.400	24.283.300
Exported.....	11,024,100	9.007,600	11.210.510	13,805.900	12.547,700
Manufactured.	15.131.600	14.390.400	12.343.000	14.358.500	11,735.600

COMPARISON of values of Imports and Exports of Crude and Manufactured Rubber and Gutta Percha, indicating the extent of consumption in the United States for the above years.

Total Imports...	$14.064.141	$9.326.421	$12.121.724	$14.022.814	$16,410,470
Total Exports ..	935.625	893.677	722,259	1,257.246	1,051,000

Is Heavy or Light Weight Hose the Cheaper?

TO those who purchase much garden hose, the above question should be of immediate interest. The two extremes of ordinary garden hose, as far as weight go, are the 14 pound and the 17 pound. Now, provided both of these kinds of hose are sold for the same price per foot, in which is the better stock, and from which may the user expect to get the best service?

It is safe to say that the cost of labor on each of these kinds of hose will be 1 cent a foot; the expense attending the manufacture will be put at ½ cent, and the profit at ½ cent, which will make a total of 2 cents per foot. Now, if this hose sells for 6 cents a foot, that will leave 4 cents a foot as the cost of material. As the hose is sold in 50 ft. lengths, that will make a total cost of $2 for the material for each length.

Now, let us consider first the style of material that is put into the 14 lb. hose. Manifestly if 14 pounds of it cost $2, 1 pound will cost one-fourteenth of that, which is 14½ cents, and 3 pounds of this material would cost three times that amount, which is 43½ cents. Now one-third of the material in the hose will be the duck, and one pound of duck costs 20 cents. Subtracting this from the 43½ cents leaves 23½ cents, which is the price of two pounds of rubber. Dividing that by 2, gives $11\frac{3}{4}$ as a cost for one pound of rubber. Now, analyzing the 17 pound hose in just the same way—that is, finding what one pound of material costs, which is 12 cents, multiplying by 3, which gives 36, subtracting the cost of the duck, which leaves 16, and halving that, gives 8, which is the cost of one pound of rubber. We have, therefore, in the light hose, a rubber compound that costs almost 12 cents, and we have in the heavy hose a rubber compound that costs 8 cents. Now, it will require very little argument on the part of a salesman, or on the part of a manufacturer to convince a buyer that a 12 cent compound has more rubber in it, and will consequently make a better wearing compound than will an 8 cent compound.

We therefore think that the light weight hose will in all cases be a better article, and be more satisfactory in every way to the purchaser than will a heavy weight hose of the same size and price per foot. We are aware that this is a position that is not taken by dealers. We know perfectly well that almost any purchaser will buy the heavy hose in preference to the light, his choice every time would be the 17 pound hose, and yet we submit, in the light of the above figures, that the purchaser is considerably off in his calculations.

Lost Less Than Twelve Days.

EDITOR OF THE INDIA RUBBER WORLD:—Our factory at Mount Vernon, at which all of our mackintoshes were made, was destroyed by fire, consuming all our goods and machinery, at noon May 25th. On the morning of June 10th we started up again in our new works, employing all our old hands, making only eleven and a half working days lost. Very truly yours,

HODGMAN RUBBER CO.

Obituary.

WILLIAM WHITEHEAD, senior member of the firm of Whitehead Brothers, manufacturers of rubber goods, at Trenton, N. J., dropped dead of heart disease at his factory, on June 10th. He was in the eightieth year of his age.

E. H. PAINE, agent for the American Rubber Co., of Boston, returned from a recent Western trip much elated with the large quantity of goods which the company is selling throughout the West.

THE rubber broker's oath—by gum.

RUBBER BUYERS' DIRECTORY.

CLASSIFIED LIST OF ADDRESSES OF MANUFACTURERS AND DEALERS IN RUBBER GOODS OF ALL KINDS.

ALPHABETICAL INDEX TO ADVERTISERS.

AIR GOODS (Rubber).

CHICAGO RUBBER CLOTHING CO., Racine, Wis.
HODGMAN RUBBER CO., New York and Boston.
TYER RUBBER CO., No. 50 Bromfield Street, Boston.
DAVOL RUBBER CO., Providence, R. I.
ATLAS RUBBER CO., New York.
GOODYEAR'S INDIA RUBBER GLOVE MANUFACTURING CO., Nos. 503-505 Broadway, New York.
HODGMAN RUBBER CO., No. 459-461 Broadway, New York.

BELTING (Rubber).

NEW YORK BELTING & PACKING CO., New York.
BOSTON BELTING CO., Boston, Mass.
BOSTON WOVEN HOSE CO., Boston, Mass.
CLEVELAND RUBBER CO., New York.
ERIE RUBBER CO., Erie, Pa.
NEW YORK RUBBER CO., New York.
BROOK, OLIPHANT & CO., Trenton, N. J.
LAKE SHORE RUBBER WORKS, Erie, Pa.
THE B. F. GOODRICH CO., Akron, Ohio.
THE GUTTA PERCHA AND RUBBER MANUFACTURING CO., New York.
THE HOME RUBBER CO., Trenton, N. J.

BOILERS.

THE HAZELTON BOILER CO., No. 716 East Thirteenth Street, New York.
ABENDROTH & ROOT MANUFACTURING CO., New York.
NATIONAL WATER TUBE BOILER CO., New Brunswick, N. J.
CAMBRIDGE BOILER WORKS, Cambridge, Mass.

CALENDERING.

MATTSON RUBBER CO., No. 8 College Place, New York.

CALENDERS.

BIRMINGHAM IRON FOUNDRY, Birmingham, Conn.
NATIONAL IRON WORKS, New Brunswick, N. J.

CELLULOID.

CELLULOID NOVELTY CO., Nos. 313, 315 Broadway, New York.

CHEMICALS FOR RUBBER WORKING.

BAYAUD & STEVENS, No. 60 New Street, New York.
THE S. W. PEARCE CO., Providence, R. I.
L. MARTIN & CO., Philadelphia.
THE ATLAS CHEMICAL CO., Boston.
THE ADAMANTA MANUFACTURING CO., Boston.
F. W. DEVOE & CO., New York.
EDWARD R. TAYLOR, Cleveland, Ohio.
MERRIMAC CHEMICAL CO., No. 13 Pearl Street, Boston, Mass.

DRUGGISTS' GOODS (Rubber).

IDEAL RUBBER CO., Nos. 1-13 Adams Street, Brooklyn, N. Y.
ATLAS RUBBER CO., New York.
THE BUTLER HARD RUBBER CO., New York.
THE INDIA RUBBER COMB CO., Nos. 9-13 Mercer Street, New York.
DAVOL RUBBER CO., No. 16 Point Street, Providence, R. I.
THE B. F. GOODRICH CO., Akron, Ohio.
HODGMAN RUBBER CO., New York and Boston.
NATIONAL INDIA RUBBER CO., Bristol, R. I.
METROPOLITAN RUBBER CO., New York.
TYER RUBBER CO., Boston, Mass.

ELASTIC TIPS.

ELASTIC TIP CO., Boston, Mass.

GUTTA PERCHA.

C. H. ARNOLD & CO., No. 145 Milk Street, Boston, Mass.

HOSE (Rubber).

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO., New York.
EUREKA FIRE HOSE CO., New York.
THE HOME RUBBER CO., Trenton, N. J.
LAKE SHORE RUBBER WORKS, Erie, Pa.
BROOK, OLIPHANT & CO., Trenton, N. J.
NEW YORK RUBBER CO., New York.
CLEVELAND RUBBER CO., New York.
THE ERIE RUBBER CO., Erie, Pa.
BOSTON WOVEN HOSE CO., Boston.
BOSTON BELTING CO., Boston.
NEW YORK BELTING AND PACKING CO., New York.

HOSPITAL SHEETINGS.

CHICAGO RUBBER CLOTHING CO., Racine, Wis.
TYER RUBBER CO., Boston Mass.
DAVOL RUBBER CO., Providence, R. I.
HODGMAN RUBBER CO., New York.

INSULATED WIRE.

NEW YORK INSULATED WIRE CO., Nos. 649-651 Broadway, New York.

LAMP BLACK.

L. MARTIN & CO., No. 226 Walnut Street, Philadelphia.

MACHINERY FOR RUBBER MANUFACTURERS.

SAFETY ELECTRIC CONSTRUCTION CO., Nos. 45-47 Wall Street, New York.
BIRMINGHAM IRON FOUNDRY Birmingham, Conn.
THE KNOWLES' STEAM PUMP WORKS, No. 111 Federal Street, Boston; No. 98 Liberty Street, New York.
ASA N. WHEELER, No. 17 Chardon Street, Boston, Mass.
THE SINGER MANUFACTURING CO., No. 385 Broadway, New York.
THE AUTOMATIC RUBBER MIXER CO., Boston, Mass.
THE NORWALK IRON WORKS CO., South Norwalk, Conn.
BOOMER & BOSCHERT PRESS CO., No. 336 West Water Street, Syracuse, N. Y.
EDRED W. CLARK, No. 31 Wells Street, Hartford, Conn.
MASON REGULATOR CO., Boston.
JOHN ROYLE & SONS, Paterson, N. J.
NATIONAL IRON WORKS, New Brunswick, N. J.

MECHANICAL RUBBER GOODS.

NEW YORK BELTING AND PACKING CO., No. 15 Park Row, New York.
BOSTON BELTING CO., No. 256-260 Devonshire Street, Boston; No. 100 Chambers Street, New York.
BOSTON WOVEN HOSE CO., No. 236 Devonshire Street, Boston; Chicago and San Francisco.
CLEVELAND RUBBER CO., Cleveland, Ohio; No. 55 Warren Street, New York
ERIE RUBBER CO., P. O. Box 456, Erie, Pa.
NEW YORK RUBBER CO., Nos. 84-86 Reade Street, New York.
BROOK, OLIPHANT & CO., P. O. Box 684, Trenton, N. J.
LAKE SHORE RUBBER WORKS, Erie, Pa.
THE B. F. GOODRICH CO., Akron, Ohio.
NEW JERSEY CAR SPRING AND RUBBER CO., Jersey City, N. J.
H. O. CANFIELD, Bridgeport, Conn.
THE NEWTON RUBBER CO., No. 292 Devonshire Street, Boston.
THE HOME RUBBER CO., Trenton, N. J.
REVERE RUBBER CO., No. 63 Franklin Street, Boston; No. 64 Reade Street, New York; Pittsburg, Chicago and San Francisco.
EUREKA FIRE HOSE CO., No. 13 Barclay Street, New York.
THE GUTTA PERCHA AND RUBBER MANUFACTURING CO., "Para" Build-

ing, Warren and Church Streets, New York
RUBBER VALVE AND SPRING CO., Trenton, N. J.

PARIS WHITE AND WHITING.

H. F. TAINTOR, No. 281 Pearl Street, New York; Brooklyn, N. Y.

PUMPS FOR RUBBER MILLS.

THE KNOWLES' STEAM PUMP WORKS, Boston and New York.

RECLAIMED RUBBER.

LOEWENTHAL & MORGANSTERN, Nos. 144-154 Provost Street, Jersey City, N. J.; No. 132 Nassau Street, New York; No. 45 Arch Street, Boston.
MURRAY, WHITEHEAD & MURRAY, Trenton, N. J.
HOUSATONIC RUBBER CO., No. 26 Knowlton Street, Bridgeport, Conn.

RUBBER BOOTS AND SHOES.

NATIONAL INDIA RUBBER CO., Boston, Providence, R. I., Philadelphia and Bristol, R. I.
THE BOSTON RUBBER SHOE CO., Boston.
GOODYEAR'S RUBBER MANUFACTURING CO., Nos. 503-505 and 205 Broadway, New York.
PARA RUBBER SHOE CO., Boston.
AMERICAN RUBBER CO., No. 60 Summer Street, Boston.
CANDEE RUBBER CO., New Haven, Conn.

RUBBER BROKERS.

DE LONG, BETTS & CO., No. 51 Stone Street and No. 19 South William Street, New York.

RUBBER CLOTHING.

CLEVELAND RUBBER CO., Cleveland, Ohio.
GOODYEAR'S RUBBER MANUFACTURING CO., New York.
GOODYEAR'S INDIA RUBBER GLOVE MANUFACTURING CO., Nos. 503-505 and 205 Broadway, New York.
HODGMAN RUBBER CO., Nos. 459-461 Broadway and 21 West Twenty-third Street, New York.
BARKER & CO., No. 27 Maiden Lane, New York.
AMERICAN RUBBER CO., Boston.
METROPOLITAN RUBBER CO., Nos. 649-651 Broadway, New York.
CHICAGO RUBBER CLOTHING CO., Racine, Wis.
STOUGHTON RUBBER CO., No. 52 Summer Street and Nos. 128-130 Arch Street, Boston; No. 335 Broadway, New York; Portland, Me.
J. FRANCIS HAYWARD, No. 160 Congress Street, Boston.

RUBBER COLORS.

F. W. DEVOE & CO., No. 101 Fulton Street, New York.

RUBBER MIXERS.

THE AUTOMATIC RUBBER MIXER CO., No. 226 Devonshire Street, Boston.
BIRMINGHAM IRON FOUNDRY, Birmingham, Conn.

RUBBER MOULDS.

ASA N. WHEELER, Boston, Mass.

RUBBER PRESSES.

ASA N. WHEELER, Boston.
THE NORWALK IRON WORKS CO., South Norwalk, Conn.
BOOMER & BOSCHERT PRESS CO., Syracuse, N. Y.
EDRED W. CLARK, Hartford, Conn.
BIRMINGHAM IRON FOUNDRY, Birmingham, Conn.
NATIONAL IRON WORKS, New Brunswick, N. J.

RUBBER TUBING MACHINES.

JOHN ROYLE & SONS, Paterson, N. J.
EDRED W. CLARK, Hartford, Conn.

STARCH AND FLOUR.

THE S. W. PEARCE CO., Nos. 34-35 South Water Street, Providence, R. I.

STATIONERS' SUNDRIES.

HODGMAN RUBBER CO., New York and Boston.
THE GOODRICH HARD RUBBER CO., Akron, Ohio.
THE B. F. GOODRICH CO., Akron, Ohio.
DAVOL RUBBER CO., Providence, R. I.
NATIONAL INDIA RUBBER CO., Bristol, R. I.
ATLAS RUBBER CO., New York.
TYER RUBBER CO., Boston, Mass.

STEAM GAUGES.

HOHMANN & MAURER, No. 90 Fulton Street, New York.

GOLDEN SULPHURET OF ANTIMONY.

THE ATLAS CHEMICAL CO., No. 35 Congress Street, Boston.

BARREL TRUCKS.

GEORGE P. CLARK, P. O. Box Y., Windsor Locks, Conn.

WHOLESALE RUBBER DEALERS.

J. FRANCIS HAYWARD, No. 160 Congress Street, Boston, Mass.

RUBBER SUBSTITUTE.

ADAMANTA MANUFACTURING CO., No. 17 Mason Building, Boston, Mass.
MERRIMAC CHEMICAL CO., No. 13 Pearl Street, Boston, Mass.

ACID FREE AND FRICTION RESINS.

ADAMANTA MANUFACTURING CO., Boston, Mass.

SNAP BUTTONS.

FRANK E. HALL, No. 67 Chauncy Street, Boston, Mass.

VULCANIZERS.

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RUBBER TOYS.

NEW YORK RUBBER CO., New York.

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REVERE RUBBER CO., Boston, Mass.

THERMOMETERS.

HOHMANN & MAURER, New York.

DISC FANS.

AKRON HEATING AND VENTILATING CO., Akron, Ohio.
GEORGE P. CLARK, Windsor Locks, Conn.

MOULD WORK.

BOSTON BELTING CO., Boston, Mass.
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CHICAGO RUBBER CLOTHING CO., Racine, Wis.
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ERIE RUBBER CO., Erie, Pa.
B. F. GOODRICH RUBBER CO., Akron, Ohio.
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GUTTA PERCHA AND RUBBER MANUFACTURING CO., New York.
HODGMAN RUBBER CO., New York.
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REVERE RUBBER CO., Boston, Mass.
RUBBER VALVE AND SPRING CO., Trenton, N. J.
TYER RUBBER CO., Boston, Mass.

Para Rubber Report.

THE following report, dated Para, May 28, 1890, is offered to THE INDIA RUBBER WORLD by J. Vianna & Co.:

"The crop which is about to end will not show the shortage of 1000 tons, which we predicted, as compared with last year's, owing to the arrivals of a large quantity of old rubber kept back in the Interior, some lots even since 1884. It seems, however, that the supply of old rubber is now exhausted. It is still too early to form an opinion about the next crop, the size of which depends chiefly on the weather and the sanitary conditions of the Interior. The arrivals for the next few months cannot in any way be larger than those during the same period last year. According to all information which we have been able to obtain, the number of gatherers in the Interior is smaller, especially in the islands; the country is unusually overflooded, many wharves being entirely under water. In the past few years, owing to low prices, the merchants in the interior stopped selling on credit to the gatherers, who were compelled through sheer necessity to work even during the rainy season, as is shown by the increase of the arrivals during the months from April to June in the years referred to. The rubber trees have been overtapped in some districts, especially where the 'Cearense' gatherers predominate, and are now yielding much less than usual.

"Some people suppose that high prices will tend to increase the production, which may probably prove the case in other countries, but here this is only likely to happen to a small extent, as we must take into consideration the lack of ambition of our gatherers, who are in most cases easily contented if they can provide for their immediate and modest wants. During the five years from 1879 to 1883, when prices reached the highest point known, the total arrivals for the months of April and September, inclusive, were less than 15,000 tons, whilst during the same months from 1884 to 1888 the arrivals ran as high as 21,500 tons, with low prices.

"The arrivals from the Islands this month are smaller than last year's, although 5600 reis is now paid for 1 kilo of fine and 1 kilo of coarse, against the price of 1950 reis for fine and 1100 for coarse in May, 1889. In resuming, with a smaller number of gatherers who have to contend with excessive rains and a precarious sanitary condition, and the rubber trees being more or less overworked, there is no reason whatever to count upon larger arrivals than last year, at least during the next few months. On the contrary, taking everything into consideration, it is only reasonable to expect a diminution. Later on when we receive better data we shall be able to found more correct opinion about the distant future."

RUBBER STATISTICS.

May 1, stock on hand—kilograms*			315,000
" 28, receipts this month—kilograms			645,000
			960,000
Exports—Europe.			
May 2, Sobialense—kilograms	130,000		
" 17, Lanfranc "	78,000	208,000	
Exports—United States.			
May 5, Augustine—kilograms	177,000		
" 12, Jerome "	126,000		
" 16, Allianca "	130,000		
" 28, Maranheme "	154,000	587,000	795,000
			165,000

Stock in first hands, 50,000; in second hands, 115,000.

* 1 kilogram = 2.20 pounds.

The Rubber Market.

THE market for crude gum may be best described as dull. There has been no sign of decrease in prices of Para, while there has been an appreciation in most other grades. The demand during the month past has been only fair, and holders have continued to indicate their faith in the firmness of the market by refraining from efforts to force sales. The chief feature of interest during the month has been the concerted action of manufacturers of mechanical rubber goods in advancing the prices of products to offset, to some extent, the cost of raw material. This may be accepted as evidence of the belief on the part of the chief buyers of rubber, that the era of high prices is not soon coming to an end. It is to be expected that business will remain dull during June and July, most dealers in rubber goods having decided to wait until the end of summer before placing their orders.

Sales of rubber were reported in Liverpool, June 12th, at 44½d. for new fine, being a decline of ½d. from the price which had ruled for a month previous.

The statistical position of the market for Para rubber is illustrated in the following statement of receipts and deliveries and the stocks here at different periods:

Stock of Para here April 30,	about	750,000 pounds.
Receipts of Para here during May,	about	2,045,000 pounds.
Deliveries of Para during May	about	1,810,000 pounds.
Stock here May 31, 1890,	about	985,000 pounds.
Stock here May 31, 1889,	about	1,185,000 pounds.
Stock here May 31, 1888,	about	2,900,000 pounds.

A comparison of the prices of Para rubber during the month of May, 1890, and for the same month in the two years preceding, is shown in this table:

	1890.		1889.		1888.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First	87	66	65	36½	76	52
Highest	92	68	67	43	76	52
Lowest	87	66	65	39½	70	47
Last	91	67	66½	42	70	47

The latest quotations in the New York market are:

Para, fine	90-92	Loando. Niggers	65
Para, coarse	66-67	Sierra Leone	54-56
Caucho (Peruvian) strip	60	Benguela	59-60
Caucho (Peruvian)-ball	65	Congo Ball	53
Mangabeaira, sheet	53	Small Ball	50-52
Esmeralda, sausage	64-65	Soft Ball	43-44
Esmeralda, strip	60	Flake, Lump and Ord	41-42
Guayaquil, strip	45-55	Mozambique, spindles	
Panama, strip	58	Mozambique, red ball	54
Virgin Scrap	70-73	Mozambique, white ball	50
Carthagena, strip	40	Madagascar, pinky	73-74
Nicaragua, scrap	62-63	Madagascar, black	53-54
Nicaragua, sheet	60-61	Borneo	45-57
Mexican, scrap	60	Gutta percha, fine grade	1.50
Mexican, sheet	58	Gutta percha, medium	90-1.00
Guatemala, sheet	53-56	Gutta percha, hard white	95
Thimbles	51-51½	Gutta percha, lower sorts	50
Tongues	50@51		

Messrs. Simpson & Beers, brokers in crude India rubber and commercial paper, report to THE INDIA RUBBER WORLD: The same condition of the money market has prevailed during the past month; occasionally one of our banks would have a little money to put into outside paper, but there has been no *regular* demand as yet. The writer has done a good business with *out of town* banks and the demand has been steady, and only for the best class of paper, the rates being from 6 to 6½,—mostly at 6 per cent. The passage of a silver bill would soon materially relieve our money market, when anything over 6 per cent. for prime paper would be exceptional.